




PRACTICAL DENTISTRY, BY PRACTICAL DENTISTS



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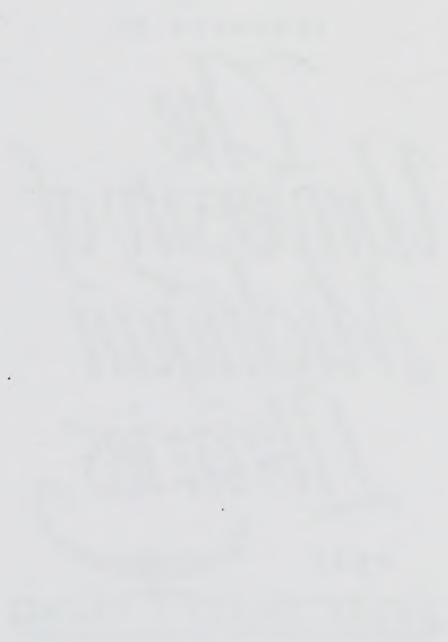
Practical Dentistry, By Practical Dentists

Anonymous

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PRACTICAL DENTISTRY

PRACTICAL DENTISTS

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BY

PRACTICAL DENTISTS

Compiled and Edited by

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PREFACE

We may not speak of dentistry as an art or a science, but rather as numerous arts and sciences in combination, applied to a particular end. It has to do with medicine, surgery and mechanics. It delves into chemistry and metallurgy and in its highest phases exemplifies the fine arts.

It is not surprising, then, that a vast amount of literature should have sprung out of the investigations and experiences of the members of this youthful profession. Dental libraries contain a great deal, much of which is authoritative and exact, and there are many volumes treating branches upon which the last word is yet to be spoken.

But a wealth of material, much of it of great practical value, the result of the experiences of the active members of the profession has an ephemeral existence, appearing perhaps in a society paper, filling the pages of professional journals, quoted in the form of condensed paragraphs, and then lost in the files that are stored in the attic, or destroyed and forgotten.

This material has a value beyond estimation; and since professional learning has become so vast and complex that even the greatest student cannot master it all, but requires only to be able to find it, the need of the careful compiler is evident.

There is no conflict between theory and practice if both are right. The theorist may overlook the details of the application of his principles, or fail to note their limitations. But the man in practice who attempts to illustrate theories emphasizes, elaborates or qualifies in details, and thus brings principles and their application into complete harmony.

Therefore from those who have devoted a portion of their busy lives to investigation and research we ex-

pect and have received much, and their opinions are ever required to guide the profession in its perpetual advance. But the humbler brother, who toils in office or laboratory from day to day with an idea primarily of efficient service and not of publicity, meets with problems which his skill and ingenuity must overcome; and oftentimes he finds a solution along new lines or discovers a shorter path than the beaten track. He, too, has something of value to contribute to dental learning.

Occasionally he appears before his society and a terse account of his experiences finds its way into print; and the professional journals throughout the old files that repose on dusty shelves are sprinkled with such hints and suggestions; but who was the author? What was the volume and page? And where is the volume we require?

The compiler assumed the task of gleaner. He has attempted to gather from dental literature of the last decade and to present in brief paragraphs that which is suggestive and helpful, expressed tersely. He acknowledges his indebtedness to the several journals as well as to the numerous authors who have been placed under contribution.

Not all that is contained in this volume has unqualified editorial indorsement. There are suggestions which will be regarded as of practical value by some but to others will hold only historical interest, marking the milestones of professional progress and shedding light upon present-day theories or methods. In either case it is believed that their insertion is justified. Selections have been made in many instances because of their suggestiveness or because they offer to the busy man a hint or a choice of methods. As far as possible duplications have been avoided. Credit has been given wherever possible; but for the good of the profession it is more vital that that which is helpful shall be included than that individual honors shall be bestowed. Emerson's idea might be applied here:

"Thought is the property of him who can conceive it and who can adequately place it."

Could one condense all the ideas which have appeared

in our dental journals for the past decade, he would have an epitome of dentistry, not the product of a few, but practically the product of the whole profession, covering its science, its art, its theory and its practice.

That, within necessary limits, has been the object in the preparation of this book, and in a measure, has been carried out.

These paragraphs, the product of hundreds of writers, appearing in the several dental journals, have been gathered, condensed and classified; and it is believed that the result is a book that will throw a flood of light on many a perplexing problem which the student may confront, and prove a valued assistant to the busy man in practice.

I. NORMAN BROOMELL.

"The Flanders," 1908,

Fifteenth and Walnut Streets,

Philadelphia.

PART ONE

CHAPTER I

OPERATIVE DENTISTRY

Preparation of Cavities, Filling Teeth and Associated Subjects

GOLD FILLINGS

A Water-tight Gold Filling.—Prepare cavity as for an inlay and then give a retention form either by grooves or dovetails. Dry the cavity and line with thin cement. Cut a piece of No. 30 or No. 40 gold foil as though for taking an impression for an inlay and put it down in the cavity in the usual impression method. This gives a cavity lined with gold, with cement in every possible irregularity. Fill with any cohesive gold which the operator is in the habit of using, beginning first with the undercuts where the lining may be split, condensing thoroughly with hand pluggers and finishing in the usual way.—W. THOMPSON MADIN, *British Dental Journal*.

Starting Gold Fillings with Cement.—Using a quantity not too large of a cement setting with moderate quickness, there is a ready and positive fixation of the first pieces of gold. There is no rocking or tipping. The pulp, when nearly exposed, is protected, weak walls are strengthened, gold is prevented from showing through thin walls, and with skilled manipulation positive anchorage is obtained in cavities in which it would be extremely difficult to pack or retain the gold in any other way.—C. A. BRACKETT, *Dental Brief*.

The Adhesive Gold Filling.—For the insertion of an adhesive gold filling, moss-fibre gold should be annealed and placed near at hand. Some creamy oxyphosphate of

zinc should be dropped into the bottom of the cavity and the gold pressed upon it in all directions, down to the bottom of the cavity and up to the edges, so that but a thin layer of cement will remain and all of the walls be covered by the adhesive layer of gold. Then press more gold firmly upon the bottom of the cavity and allow the cement to set. Then condense the gold thoroughly and add more sponge gold, condensing until a thick, solid mass is obtained in the bottom of the cavity and the edges cleansed of all adhering cement. Then finish with gold leaf or pellets as desired.—JOSEPH HEAD, *Dental Digest*.

Tin and Gold; Coloration.—Fillings of mixed tin and gold—one of tin to six of gold—will retain permanently the color of Roman gold—a pale greenish tint—laying a sheet of tin on three of gold and covering with three more of gold; Non-cohesive gold No. 4 and tin foil No. 4 cut in four or five strips, and then, in suitable lengths, rolling between the fingers to form cylinders and avoiding exposure of the tin. In finishing the filling burnishers must not be used, or the color of the tin will be brought out.—A. HUGEN-SCHMIDT, *Revue de Stomatologie*.

Combination Filling; Gold and Tin Foil.—That the tin may be equally distributed throughout the gold, and in the proportion of about one to six, fold a sheet of soft gold over twice, giving four layers, then place on the folded gold a strip of tin foil of the same length as the gold, but somewhat narrower. Fold the gold over the tin a sufficient number of times to make the strip the required width. By this combination we get greater softness, toughness, more certainty in the welding, greater solidity, and stronger margins.—BENJAMIN LORD, *International Dental Journal*.

Tin-and-Gold Cylinders.—Keep ready rolled two or three books of different sized cylinders of (a) gold, one part; tin, one part; (b) gold, five parts; tin, one part; (c) gold, eleven parts; tin, one part, respectively. The first packs almost like amalgam, will unite very quickly

by electrolysis, and gets almost as dark as amalgam in most cases. The second packs less readily, unites almost as quickly by electrolysis, and keeps a dark, mottled gold color. The third packs almost like, but more firmly than, soft gold, does not unite as quickly as the others, and keeps a color closely resembling that of pure gold.—DR. VON BEUST, *Items of Interest*.

Care of Gold Foil in Pellets.—In the same drawer with the open box or bottle containing the pellets, place a small porcelain receptacle containing a pledget of cotton saturated with aqua ammonia. The escaping gas will render the pellets uniformly soft, velvety and manageable, and absolutely non-cohesive. When about to use, transfer the pellets to the electric annealer, and turn on the current; the result will be a series of pellets, each in its behavior peculiarly like its fellows, and capable of perfect cohesion and density under the impact of the plugger.—C. N. JOHNSON, *Dental Cosmos*.

The Ideal Gold Filling.—The ideal gold filling will have its margins carried into the region of comparative immunity; will be perfectly adapted to the walls of the cavity, making an absolutely water-tight filling; will be so dense that its specific gravity shall be close to that of cast gold; so contoured that it will preserve the interproximal space; so antagonize the occluding teeth that it will have the greatest usefulness consistent with safety; and finally, will be finished and polished like a mirror.—J. V. CONZETT, *Dental Review*.

A Combination Filling.—Pure gold built into a layer of soft cement, first using soft gold, then cohesive foil, and where subject to abrasion finishing with gold-platinum foil, forms a combination magnifying the good qualities and minimizing the faults of each of the ingredients. The cement is adhesive, the soft gold gives close adaptation to cavity walls and margins, the cohesive gold resists lateral stress in contour, and the alloy of gold and platinum resists abrasion.—CLYDE DAVIS, *Dental Summary*.

Tin and Gold; Annealing the Tin.—Put into the cavity as many tin cylinders as will fill it when consolidated. Heat a small plugger in an alcohol flame and force it into the mass, thus annealing the tin in the cavity. Repeat until the tin shows a decided change in the relation of its molecules by its resistance under the plugger. The degree of heat is immaterial, provided it is done with care, bearing in mind that tin is a low conductor of heat and cold, while the teeth respond very quickly to thermal changes.—T. D. SHUMWAY, *Items of Interest*.

Tin and Gold.—It has always been taught that tin must go next to the cervical border, the weak point, but for eighteen months I have reversed the practice, and I believe there is something in it. Tin next to the cervical margin turns black and looks like a line of black caries. There is not this trouble when the gold is put next to the border and the tin in the middle.—J. Y. CRAWFORD.

Mat Gold.—Use mat gold judiciously, study your teeth and its manipulation, and you will never regret adopting it. No retaining pits are needed; for conformity and adaptation to cavities nothing can equal it. At the cervical margin it is equal to tin as a tooth-saver. When properly treated it is soft and cohesive. For good color electro-mat takes precedence, but in other respects all the mat golds appear alike.—E. N. STUMP, *Dental Digest*.

Mat of Gold at Cervix.—A mat of gold at the cervical margins, especially in bicuspid and molars, makes not only an excellent foundation for the first layers of the filling but it also holds the matrix from the margins to a degree affording abundance of material for contouring and fine finishing. The mat should consist of several layers and extend far enough into the proximal space to fold a little gumwards.—*Dental Office and Laboratory*.

Combination Gold and Cement Fillings.—Solila gold is non-tipping; the plugger perforates it and presses the particles into the soft cement which, after hardening, can be

built on with any kind of gold desired; the cement should be a very thin layer of a creamy mix, so that the gold will be almost in contact with the walls. Pressure gives greater adhesion and causes it to set more rapidly.—J. J. REED, *Dental Review*.

Why Some Gold Fillings Become Loose.—When a gold filling is subjected to the impact of mastication for a time it will undoubtedly change its shape, so that the fillings in a good many teeth will become loose—not because they are improperly shaped, not because the tooth has been improperly filled, but because of the impact brought to bear upon the gold. In time it is forced from position by means of a change in its shape.—W. H. TRUEMAN, *International Dental Journal*.

Packing Non-cohesive Gold.—Place a very large piece of non-cohesive gold in the cavity, following with a large ball of bibulous paper which is then packed with a large plugger, carrying before it the soft gold which is thus carried safely to the floor of the cavity, not punctured or cut through with the plugger point. Condense without the mallet until two or three such layers have been made, when it may be malleted *ad libitum*.—S. G. PERRY, *Dental Era*.

Adhesive Gold Fillings.—The use of soft cement under a gold filling prevents thermal shock to a certain extent and obviates the necessity for cutting grooves or anchor pits in very sensitive teeth, to the great relief of the patient. Before inserting the cement apply oil of cloves, wiping out the excess; this prevents injury to the pulp by the phosphoric acid, and prevents recurrence of decay to a greater or less extent.—J. L. SUTPHIN, *Dental Digest*

To Cut Gold Foil in the Form of Ribbons.—Lay a sheet of gold on a sheet of white writing paper; cover with another sheet of paper and a piece of gold on that, and so on, until there are as many sheets of gold as required. Fold the whole over twice, as in folding a letter, and cut through

gold and paper. There will be no torn edges, and the gold will not come in contact with the hands.—HENRY BARNES, *Ohio Dental Journal*.

Combination Gold and Amalgam Filling.—With a thin coating of varnish spread upon the dentinal walls and gingival margins, a layer of amalgam can be quickly burnished on, forming a base on which to build gold that will remain an absolute bar to oral fluids. The cohesion of gold to amalgam, and of amalgam to dentin, add very largely to stability and preservation, while much less time is required to insert a filling in this way.—DR. HEWITT, *The Bur*.

Failure of Gold Fillings.—The condition of the peridental membrane is at times the most serious handicap to the insertion of gold fillings with the force necessary to get the best results in occluso-proximal cavities. The peridental membrane is very often so sensitive to pressure as to make the force required unbearable, though the teeth in themselves are abundantly strong to withstand such force.—WM. L. ELLERBECK, *International Dental Journal*.

So-called "Annealing" Gold Foil.—A pellet of cohesive gold may be made non-cohesive by exposing it to the influence of ammonia fumes, and the pellets so made non-cohesive may be made cohesive again by driving off the ammonia gas with heat, and this is what we do with our non-cohesive foil when we heat it; but this is not analogous to the "annealing" of gold plate, and it is not intended to *anneal* the non-cohesive gold.—M. L. WARD, *Dental Digest*.

Gold and Platinum.—Gold and platinum should be employed to a greater extent than it is to-day, for while its manipulation is somewhat more exacting than that of gold, its intelligent use will lead to artistic results unattainable with gold alone, and its superior density adds greater permanence to the surfaces of all fillings which are in any way subject to attrition.—C. N. JOHNSON, *International Dental Journal*.

Moss-fibre Gold.—The advantages offered by the use of moss-fibre gold, in contour work, are its extreme softness and adaptability, which make malleting unnecessary, even extremely heavy hand-pressure not being required to make the filling sufficiently hard and strong, the operation being consequently much less fatiguing to the patient.—R. G. HUTCHINSON, JR., *Dental Cosmos*.

Non-cohesive Gold.—The preparation of absolutely non-cohesive gold is more or less a secret process, but it is assumed that the beaten foil is placed in a furnace between sheets of paper and allowed to remain in the muffle until the paper is incinerated. Absolutely non-cohesive gold does not regain cohesive properties by annealing, even if heated to cherry redness.—JOHN I. HART, *The Dentist's Magazine*.

Sponge Gold.—Line the cavity with a creamy mix of zinc oxyphosphate, then pack a thin layer of sponge gold over this and allow the cement to set; then pack the gold up to the coronal edges, being certain that the edges are perfect, and we have the ideal gold filling—an adhesive gold filling the most perfect that has ever been given to the dentist to make.—JOSEPH HEAD, *Dental Cosmos*.

Gold Fillings Patched with Amalgam.—The cavity extending beyond the filling must be properly sterilized, but it is a great mistake to try to sterilize them with substances that are not absolutely soluble in water; therefore sterilize them with bichlorid, or with formalin or something of that nature rather than with creosote, carbolic acid, etc.—A. W. HARLAN, *Items of Interest*.

Starting Cohesive Gold Fillings.—In hypersensitive dentin, where excavation is almost intolerable, make the cavity only retentive in form. Place a large pellet of soft foil in the cervical region, drive cohesive foil into its centre, and the desired *start* is easily made. Soft foil thus used becomes a most powerful assistant.—D. E. SHEEHAN, *Dental Register*.

Combination Cohesive and Non-cohesive Gold Fillings.—

The combination of cohesive and non-cohesive gold, using the good qualities of both, and eliminating as much as possible their bad qualities, saves time, energy and nerves, in filling cavities in the approximo-occlusal surfaces of bicuspid and molars.—J. V. CONZETT, *Dental Cosmos*.

Platinum-Gold.—With a platinum-gold filling in a front tooth there is no display or glitter of gold; it is simply a restoration of contour, perfect in color and which will withstand any wear that may be put upon it in mastication. You can use platinum-gold and do yourselves, your profession, and your patients the greatest good.—H. J. MCKELLOPS.

AMALGAM FILLINGS**Amalgam Fillings in Adjacent Proximal Cavities.—**

When both cavities involve the morsal surface, with the gingival margins at or near the gum, prepare the cavities as for porcelain inlays, making round, smooth, well-defined edges. Make a gold matrix for one cavity and fill with a quick-setting amalgam, building with contour slightly in excess. Remove the matrix with the filling and set it aside while the second cavity is similarly treated. Fill the cavities with gutta-percha and dismiss the patient until second sitting. Drop each matrix with its contained amalgam filling upon a small pile of freshly mixed plaster and trim to satisfactory form for handling. When set, trim the amalgam to shape and polish, the gold serving as guide to cavity margins, the gingival margins being thus easily polished. At next sitting place the dam and treat each filling as an inlay.—R. OTTOLENGUI, *International Dental Journal*.

Removal of Amalgam Fillings.—Apply a thermo-cautery point to the surface of the filling. When globules of mercury appear on the surface of the filling, force the point further into the filling, which will be softened in a few

seconds. The amalgam can then be readily removed with an excavator. If there is an adjacent filling, which it is desired to preserve, a non-conductor should be inserted between the teeth—a piece of visiting card will be found sufficient.—H. RODIER, *Revue de Stomatologie*.

An Amalgam Crown.—In the case of a molar too badly broken down to warrant filling, remove all the enamel that is not pretty well supported with dentin and shape to receive band of German silver, made to articulate with the occluding teeth. With band in place fill the root-canals and ream out the pulp-chamber for anchorage of a quick-setting alloy. At a subsequent sitting remove the band and finish up the case, grinding up the cusps or protecting the surfaces.—B. F. BRUCE, *Dental Hints*.

Preparation of Amalgam.—When the alloy is ready for the cavity, place the mass on a slab and pound it thoroughly, using a mandrel with head the size of a pea, and hand mallet. Pound it until it works tough and sharp. Then place it in the cavity in little smooth blocks and pack with smooth burnishers, removing excess of mercury from each piece. Pluggers do not condense or pack the alloy, but rather cut up and push about that which has been placed in position. More alloy and less mercury remains in the filling by this method.—I. R. SIMS, *Dental World*.

Amalgam and Oxyphosphate—A New Combination Filling.—Heat an amalgam button and mix the cement simultaneously and immediately incorporate the amalgam with the cement mass, giving a gray mass which retains the adhesiveness of the cement, sets hard in the same time as the cement alone, and within ten minutes of its introduction can be varnished to a fine metallic lustre. The fillings wear well. Vary the proportions according to the masticating strength the filling will require. Absolute dryness is essential to success.—WILLIAM GUY, *Dental Record*.

Amalgam Restoration of Crown.—The entire crown being gone, the roots were filled, a heavy gold screw inserted in each root, cut off to about the level of the adjoining teeth. A platinum-lined gold band, 32-gauge, is slightly contoured and pressed down over the remnants of the root and filled with amalgam, bitten into by the opposing teeth to give the occlusion. The amalgam engaging in the threads of the screws and the contour of the band makes a solid crown. Finish by absorbing surplus mercury with pellets of gold.—E. A. BOGUE, *International Dental Journal*.

Mixing Amalgam.—Proper amalgamation is essential to the best results, and proper amalgamation is to be obtained just as you would get the best results in mixing oxyphosphate cement; that is, first put in the mortar all the mercury required for that mix, add but a small portion of alloy and pestle it out of sight, and gradually add other portions of alloy until the mass is the right consistence without squeezing out any of the mercury.—W. W. COON, *Dental Cosmos*.

To Hasten the Setting of Amalgam.—Precipitated silver is a very effective and convenient agent for hardening amalgam fillings and absorbing the surplus mercury pressed to the surface in packing. Its affinity for mercury is as great as that of freshly annealed crystal gold. Apply to fillings in lower teeth with tweezers or a small scoop; carry to place in upper teeth on the point of the finger. Make the filling more than flush, and burnish down to secure the best results.—J. MORGAN HOWE, *International Dental Journal*.

Amalgam as a Filling Material.—One objection to amalgam is that it is productive of pulp stones, one of the most annoying things a dentist has to contend with. There is no doubt but that all metals employed in filling teeth are more or less responsible for the production of pulp stones, but it is especially true of amalgam.—J. Y. CRAWFORD, *Items of Interest*.

Gold Amalgam.—The addition of a small percentage of gold to the alloy is an advantage, dissolving the gold in the mercury. One grain of Watt's crystal gold dissolved in four hundred grains of mercury gives a solution of one-fourth of one per cent. Eight grains gives a two per cent. solution. A small percentage of gold makes the amalgam tougher, gives it a better color, and renders it more satisfactory altogether. Dissolving the gold in the mercury insures perfect distribution throughout the mass.—W. W. COON, *Dental Cosmos*.

Mixing Amalgams.—When an alloy is amalgamated and the excess of mercury removed by squeezing, an unknown quantity of the constituents of the alloy is removed by the mercury, depending upon the solubility of the metals in mercury. To obtain the best results they should be mixed with a definite quantity of mercury, and under no conditions must excess of mercury be used.—F. J. BRISLEE, *Dental Record*.

Why Some Amalgam Fillings are Failures.—Upon the assumption that amalgam is a cheap material, all of the steps in the operation are made too cheap; a fundamental error, because cavity-preparation, contouring, and subsequent finishing are all fixed factors in tooth-filling, regardless of material. Imperfect preparation, hasty and sloppy packing, and failure to dress to perfect margins are simply malpractice.—H. H. BURCHARD, *The Stomatologist*.

Polishing Amalgam Fillings.—The surface of an amalgam filling should be made smooth with fine pumice and moose hide discs, followed by whiting and a fine brush wheel; this will produce a surface like burnished silver. These fillings, of course, tarnish, but at each sitting for cleansing the lustre is quickly restored with the polishing brush.—R. OTTOLENGUI, *Items of Interest*.

Combination Filling, Alloy Fillings and Oxyphosphate.—
(1) With the average oxyphosphate powder mix thoroughly an equal part of fine-cut alloy fillings, and prepare

as usual by mixing with phosphoric acid. After inserting, continue pressure until crystallization is well advanced. Resists attrition, and there is never any discoloration. The lasting qualities are much improved by the combination.—C. B. PARKER.

Repairing Amalgam Fillings.—When it is desired to add to an old amalgam filling, clean the surface with a cross-cut bur, wipe the cleaned part of the amalgam with a piece of cotton wool moistened with concentrated phosphoric acid and pack on the new amalgam which will adhere with no trouble; the joint has about eighty per cent. of the strength of the amalgam used.—STANLEY READ, *British Dental Journal*.

Removal of Surplus Mercury.—The surplus mercury can be squeezed out of amalgam if every part of the mass is squeezed simultaneously, just as water can be squeezed out to the utmost extent from a sponge if the sponge be entirely enclosed in the hands. To effect the entire compression of the amalgam in the cavity, use a matrix and squeeze powerfully over the whole free surface with a closely fitted pad.—HARRY BALDWIN, *British Dental Journal*.

Adherent Amalgam Fillings.—Prepare the cavity with sharp, smooth edges and mix the alloy to the consistency of soft wax. Place a few drops of creamy oxyphosphate of zinc in the cavity and squeeze it out with amalgam pressed firmly against it. Allow the cement to set, scrape and cleanse the edges, and finish with amalgam squeezed dry. This gives a dense adhesive filling that will not discolor.—JOSEPH HEAD, *Dental Digest*.

Packing Amalgam.—Pressure on any one portion of a large amalgam filling should be very light, as heavy pressure on one part springs or bends the amalgam away from another part where it may pass unobserved. If this theory is correct, the filling will surely be disturbed many times by the occluding tooth striking it before it has hardened.—J. N. CROUSE, *Dental Digest*.

Removal of Amalgam Fillings.—Hold a heated instrument on the filling until the heat is felt in the tooth. Bur out at once, when it can be cut like cheese. Use an instrument having a very slender shank with a bulbous end, one of the old "Wood's Metal" fillers of forty years ago. The slender shank prevents the heat from radiating too rapidly.—A. H. BROCKWAY, *International Dental Journal*.

Finishing Amalgam Fillings.—As a rule it is far more difficult to finish properly an amalgam filling than one made of any other material. It always takes me a longer time to finish an amalgam filling made in the proximal surface of a tooth that has an adjoining tooth in position than it does to prepare the cavity and make the filling.—E. K. WEDELSTAEDT, *Dental Review*.

Durability of Amalgam.—I have two amalgam fillings in my mouth that were put in 49 years ago, before the days of rubber-dam, absorbent cotton, or anything of that kind. The cavities were simply cleaned out by hand, and wiped out with commercial cotton. The fillings are good yet, and will last to the end of my days, I have no doubt.—J. A. WATLING, *Dental Register*.

Amalgam Fillings; the Matrix.—When two proximal fillings are together put in one at a time and wait until the amalgam has thoroughly set before inserting the other. But if time does not permit of this, put in a double matrix and insert a Dickinson wedge, forcing the bands closely to the neck of the tooth. When the wedge is removed the two bands fall together and are not troublesome to remove.—GEO. E. HARDY, *Dental Cosmos*.

Contour Amalgam.—In contouring with amalgam a matrix should always be used for any cavity involving the occlusal and proximal surfaces; and in these days of quick-setting amalgam the filling oftentimes may be inserted and practically finished at one sitting. A matrix, wherever applicable, is of the greatest benefit.—JAMES M. MAGEE, *Dental Brief*.

Amalgam Cement Fillings.—In amalgamating the alloy, bring to ordinary plastic consistency and then, when a very small quantity of cement has been brought to a creamy, sticky consistency, thoroughly incorporate plastic mass, and hasten to cavity. Coat with the amalgam, if practicable, though without this finish it will do better service than cement alone.—A. J. FLANAGAN, *Dental Digest*.

Amalgam Restorations.—For molars or even bicuspid, with extensive destruction of crown area, amalgam restorations are strong, permanent, hygienic and serviceable operations. They fill a place in practice that cannot be filled by crown or inlay because of either hygienic or economical reasons.—GEO. R. WARNER, *Items of Interest*.

Mixed Amalgam and Gold Fillings.—For frail-walled cavities half fill the cavity with soft amalgam and complete with that which has been thoroughly squeezed. Then lay on crystalloid gold or pellets until the mercury disappears, leaving the appearance of a complete gold filling.—F. ROBINSON, *Dental Cosmos*.

A Place for Copper Amalgam.—In hypersensitive cavities along the buccal surface of molars, where it is almost impossible to properly prepare them thoroughly for filling, dry them out as well as you can, and by filling with copper amalgam you save the teeth with less preparation than with any other material ever used.—J. A. LIBBEY, *Dental Cosmos*.

To Collect Spilled Mercury.—If mercury is accidentally spilled on table or floor, make a wet ring around it; it will be found that the globules of mercury cannot readily cross this ring, and the mercury can be collected without difficulty in a small shovel made from a piece of thin card or even in an ordinary envelope.—*British Dental Journal*.

Anchorage for Alloy Fillings.—Double-headed rivets made in assorted lengths from gold-plated brass wire about No. 23 or a trifle smaller afford positive anchorage for large alloy fillings in badly decayed molars and bicuspid.—W. S. PAYSON, *Items of Interest*.

Failure of Amalgam Fillings.—In proximal cavities it is impossible to make a perfect filling without the aid of the matrix. You cannot have success without pressure, and you cannot have pressure without a matrix. Another source of failure is neglect to place cement under the amalgam.—J. P. ROOT, *Western Dental Journal*.

Removal of Amalgam Fillings.—With a spear-pointed drill, made sharp for the purpose, drill into the filling at the median line and move the drill back and forth, making a slit until the filling is divided in halves, when it is easily removed in two pieces by pressing each piece inward toward the centre, thus dislodging it.—R. OTTOLENGUI, *Items of Interest*.

Amalgam Fillings and the Rubber-dam.—Many amalgam fillings that have failed would be perfect to-day had they been put in as they should have been. To willfully neglect the application of the rubber-dam is unpardonable. This vulnerable point should not be passed over lightly.—GEO. ZEDERBAUM, *Dental Register*.

Amalgam Fillings: Overhanging Edges.—A good deal of trouble originates from rough, overhanging edges up under the gum line. A little strip of rubber drawn tightly up under the gum around the margin of the cavity will give good results; it will burnish a hard amalgam.—A. T. WHITE, *Dental Summary*.

Removal of Old Amalgam Fillings.—The galvanic current will eliminate the mercury from an old filling. Remove the mercury as it sweats from the metal, and there will only remain so much powder or alloy, which is readily removed with chip-blower and spoons.—B. J. CIGRAND, *Dental Digest*.

Amalgam Fillings.—Don't use the same mix of amalgam for the whole of a large cavity, or the filling will be softer on the surface than beneath, thus inducing a shrinkage that will destroy the adaptation of the filling to the cavity margin.—HAROLD CLARK, *Dominion Dental Journal*.

Alloy and Phosphate Filings.—Mix dry phosphate powder with the fine filings of an alloy. Use in connection with the liquid of the phosphate powder. After two or three days polish with a smooth stone in the engine. Recommended especially for teeth of children.—R. OTTOLENGUI, *Dental Headlight*.

Mixing Amalgam.—Place mercury and alloy on a piece of rubber-dam in the palm of the hand. Gather up the corners and edges and twist them together; place the bulbous portion against a flat, smooth surface and roll vigorously. The advantages are obvious.—R. L. GRABER, *Dental Review*.

The Best Tooth-saving Alloys.—The amalgam that blackens saves teeth the best, but no matter what kind is used, always, if possible, thoroughly dry the cavity; line with a good varnish or oxychlorid. If dryness cannot be obtained, put in an alloy containing copper.—*Dental Hints*.

Amalgam Repairs in Defective Gold Fillings.—Often-times gold fillings, instead of being cut out, can be patched very satisfactorily by the use of amalgam where one can make a little undercut above the filling.—C. N. PIERCE, *International Dental Journal*.

In Using Amalgam.—Weigh the alloy and mercury; usually 1 of mercury to 3 of the alloy by weight will make a homogeneous mass under strong pressure without pressing out surplus mercury.—J. D. PATTERSON, *Kansas City Dental Journal*.

Finishing Amalgam Fillings.—After filling is trimmed to shape and contour, burnish all over with warm (not hot) burnishers. The result will be surprising to those who had not tried this method.—W. MITCHELL, *Dental Review*.

The Addition of Gold to Amalgam.—Amalgam is materially improved by the addition of gold; it gives additional edge strength and adds materially to the quality and also to the setting of the alloy.—F. E. HOWARD, *Dental Cosmos*.

Amalgam Repairs.—Fresh amalgam can be made to adhere to an old amalgam filling, merely coating the freshly exposed surface of the latter with chlorhydric acid.—DR. BEEBEE.

Amalgam Fillings in Opposite Proximal Cavities.—Fill one cavity at the first sitting. Polish it at the next sitting before filling the opposite cavity.—R. OTTOLENGUI, *International Dental Journal*.

Gold-shell Crown versus Amalgam Filling.—So long as the roots of a molar are intact and in such a state of health as to warrant their retention, it may be restored to usefulness by a contour amalgam filling.—C. E. PEARSON, *Dental Cosmos*.

Combined Amalgam and Cement Fillings.—If you burnish the mercury to the surface, these fillings will last three years longer than the ordinary plastic filling. Burnishing is the great point.—DR. BURT, *Dental Cosmos*.

The Place for Amalgam.—Perhaps the most general rule that can be given for amalgam is this: "Keep it out of sight."—A. G. BENNETT, *Western Dental Journal*.

To Improve the Color of Amalgam.—Dissolve gold foil in the mercury—from one to four sheets of No. 4 foil to one ounce of mercury.—A. O. OSGOOD, *Dental Cosmos*.

CEMENT FILLINGS

"Enamel Cement"—Amalgam and Oxyphosphate Fillings.—To the alloy selected add enough mercury to make a mass that will not crumble if pressed between the fingers. When thoroughly mixed, add about one-third in bulk of oxyphosphate powder, mixing all together. Place on the mixing tablet a quantity of the liquid sufficient for the powder, and incorporate the mass to a putty-like consistency; insert in cavity as expeditiously as possible, with pressure, using a matrix in proximal cavities.—C. W. STRANG, *International Dental Journal*.

Cement Fillings.—Cement fillings should be absolutely dry before allowing contact with the fluids of the mouth, otherwise they will absorb moisture, will not become thoroughly hardened, and will act as a constant menace to the life of the tooth instead of as a barrier against the ingress and development of microorganisms. The simplest method for the protection of the filling is a coating of collodion, which, after evaporation, leaves a film which excludes the buccal secretions and does not deteriorate until long after the filling has become thoroughly hardened.—*Dental Cosmos*.

Combination Filling, Oxyphosphate and Gutta-percha.—In bicuspsids, and sometimes in molars, where the cavities extend well below the gum line, particularly on the approximate surfaces, in teeth of soft and chalk-like structure, coat the floor of the cavity with chloro-balsam and fill with gutta-percha to about one-sixteenth inch above the gum line; the rest of the filling to be made of cement. This filling has the advantage of cement in strength for contour, adhesion for anchorage, without the disadvantage of washing out at margin—the defective point of all cement fillings.—F. T. VAN WOERT.

Tin Cement.—This new filling material is a mixture of zinc oxid and precipitated tin, forming a light gray powder, and may be mixed with any good cement liquid, using all the powder the liquid will take up, bringing it, by kneading more powder in with the fingers, to the consistency of very thick putty. It is very adhesive, and the instruments used should be coated with vaseline, which only seems to make the cement more impervious.—F. C. BRUSH, *Items of Interest*.

Mixing Cement.—Too often cement does not receive sufficient careful spatulation, yet it can be utterly ruined by overspatulation. Too little spatulation gives a quick-setting, granular result; overspatulation gives cement which will never properly crystallize.—W. V. B. AMES, *The Dental Summary*.

Cement and Amalgam.—As cement does not discolor, does not shrink nor expand, and does not flow nor spread under pressure, all of which constitute serious objections to amalgam, yet as cement does not resist the oral secretions when exposed to their action, an advantage possessed by amalgam, the ideal filling would seem to be one of which two-thirds is cement, with a veneer of amalgam. Dryness being an important consideration, cleanse the cavity with peroxid of hydrogen and alcohol, which puts it in good condition to receive the cement.—G. L. AMBROSE, *Western Den. Jour.*

Cement Lining under Amalgam Fillings.—When the loss of dentin leaves a section of translucent enamel, a lining of cement is desirable when amalgam is to be used. Having the amalgam mixed and ready, cover the cavity walls with cement and crowd the amalgam in so as to force out the surplus cement, clearing the margins so that no line of cement is exposed. This should be done with some rapidity to force out surplus cement before crystallization begins, especially at obscure margins.—R. B. TULLER, *American Dental Journal*.

To Insure a Smooth Hard Cement Filling in Proximal Surfaces.—When the labial and lingual walls are to be restored, pass a thin piece of slightly oiled mica or celluloid between the teeth. After introducing the cement press this matrix firmly over the cavity and hold for a few minutes. The pressure makes a more solid filling, the oil prevents the cement from sticking to the matrix and the matrix gives the proper space between the teeth.—*British Journal of Dental Science*.

The Ideal Cement Slab.—A glazed tile, such as the ornamental tiles used around fireplace mantels, makes the best cement slab, and can be obtained from any dealer in builders' supplies for a few cents. Scraping does not scratch them as it does a glass slab, and they are easily made absolutely clean.—H. B. DENTON, *Dental Review*.

Cement and Amalgam.—If a cavity with very frail walls is nearly filled with cement, and a veneer of amalgam well burnished in, the cement will cling to the frail walls and add materially to their strength, while the amalgam will form a strong union with the cement and seldom break away. The tubuli of the dentin are better filled and the teeth will be less affected by thermal changes.—G. L. AMBROSE, *Western Den. Jour.*

Cement Anchorage or Fillings.—Dr. Wedelstadt has found that cement is very unreliable for holding fillings built into it while in a plastic state, not because of its inability to hold the filling but because of its continually changing of form for days and weeks, many of the cements expanding very materially, making it impossible to maintain the close contact necessary between the cavity margin and the filling.—I. F. WALLACE, *Dental Era.*

Cement Linings.—The right quantity of cement, mixed to a proper consistency, placed beneath gold foil in a cavity and subjected to the pressure required to weld the gold, will so perfectly seal the dental tubuli that we may entirely prevent the black line of discoloration always present between cohesive gold and the tooth substance where the cavity is unlined.—F. S. TRICKEY, *Dental Review.*

Cement Cavity Lining.—Cement as a cavity lining serves as anchorage; to secure perfect adaptation; as a non-conductor; to strengthen frail walls; to prevent discoloration from amalgam; to avoid cutting in sensitive dentin; to prevent shrinkage of amalgam from cavity walls, and to save time for both patient and operator.—I. I. REED, *Dental Record.*

Mixing Cement.—Always shake the cement liquid before using. The ingredients of which the liquid is composed vary slightly in specific gravity and the bottle should be shaken each time before using to secure uniform mixes.—*Dental Brief.*

A Hickory Spatula.—The glaze of a glass cement slab being removed, giving a slightly roughened surface, the fine fibre of a hickory spatula permits a mill-stone grind to the mixture of powder and liquid, insuring the breaking apart and turning over and around of all cement particles, giving a more even mixture and securing a more perfect chemical union, with no discoloration.—D. R. PHILLIPS, *Northwestern Dental Journal*.

Oxyphosphate of Copper Cement.—We frequently find children's teeth so sensitive that it is almost impossible to clean out the decay at all. You can manage these cases with this cement. It is not necessary for the cavity to be perfectly dry, for the cement will adhere to the walls of the cavity and become very hard.—G. A. MAXFIELD, *Dental Cosmos*.

Mixing Cement.—Having lined the cavity-walls with a thick, creamy mix, the balance is to be made as stiff as it can be properly spatulated. This proper stiffness of mix is indicated by the cement rolling up after the spatula instead of remaining on the slab as a smooth film.—W. V. B. AMES, *Dental Summary*.

Cement-Amalgam Combination.—The best way of using cement in combination with amalgam is to press the cement in with amalgam, by which it acquires a close apposition and stronger adhesion to the tooth than when the cement is put in alone, being driven in under greater compression and not pulled away again by adhesion to the instrument.—HARRY BALDWIN, *British Dental Journal*.

Durable Cement Filling.—Burnish the enamel powder into the surface of the filling before it is perfectly hard. This prolongs its insolubility.—*Med. Brief*.

Protection of Cement Fillings.—Paraffin and resin melted together in equal parts make an excellent coating for cement fillings.—WALTER F. LEWIS, *Pacific Stom. Gazet*.

Matrix for Cement Fillings.—For adjacent proximal fillings place a piece of rubber-dam between the teeth, drawing it taut around the tooth to be first filled, then around the other. When finished cut the rubber away, leaving a small piece between the fillings to be removed at the next sitting.—*Ohio Dental Journal*.

Cement for Cavities in Ooclusal Surface.—If a little porcelain dust (made by pounding old porcelain teeth very fine) is incorporated with the usual cement it will make a very dense filling with a hard flint-like surface, especially useful on masticating surfaces.—DR. DUNN, *Am. Dental Weekly*.

Cement Linings for Amalgam Fillings.—Cement fills the porous dentin and prevents chemical action upon the enamel. In deep cavities make the body of the filling of cement. When set, add a thin mixture of cement, and at once finish with amalgam or gold—S. B. PALMER, *International Dental Journal*.

Protection of Cement while Setting.—In cases where moisture can be excluded from a cement filling but a short time, press a piece of tin-foil over the fresh cement. It will adhere and protect the surface until hard.—M. G. McELHINNEY, *Dental Review*.

Amalgam-cement Filling.—The best filling for temporary teeth is a combination of amalgam and cement, using about two-thirds fillings to one-third cement, mixing with the spatula in the ordinary way of mixing cement.—DR. MCKEE, *Dental World*.

The Setting of Cement.—The addition of a very little finely powdered borax to the powder of a cement will change it from a rapidly-setting to a slow-setting one. On the other hand, a drop of hydrochloric acid will make the cement set rapidly.—*Vierteljahrschrift*.

Paraform Cement Filling.—The addition of a small proportion of paraform to cement, in addition to its germicidal qualities, gives added strength, as it is comparatively insoluble in water; it also makes the cement more sticky.—A. A. FOWLER, *Pacific Med. D. Gazette*.

Cement and Amalgam Filling.—Place cement in the cavity, press a little amalgam in it and wait until the mass hardens. Then complete the filling with amalgam.—GEO. ELLIOTT, *Ohio Den. Journal*.

To Prevent Adhesion of Very Soft Cement to Instrument.—Smear the instrument with phosphoric acid before allowing it to come in contact with the cement.—A. M. WAAS, *Dental Review*.

Aseptic Cement.—Mix iodoform or aristol with the powder of cement in placing crowns, bridges, or in substrata under cement fillings. Destroys septic germs from the fluids of the mouth.—B. H. TEAGUE, *Dental Hints*.

Antiseptic Cement.—Mix with the powder of the cement about one-tenth by bulk of hydronaphthol. This keeps the cement aseptic and does not affect the strength of the cement in the slightest degree.—JOHN GIRDWOOD, *Dental Cosmos*.

TIN FOIL FILLINGS

The Gingival Margin.—Many old fillings demonstrate that gingival margins resist decay much better when covered with pure tin than with gold or amalgam. The tin when used alone does not satisfactorily resist the stress of mastication, hence the combination filling, covering the base of the cavity, and particularly the gingival margin, with pure crystal tin, finishing with gold, or even amalgam, as the case may demand.—CLYDE DAVIS, *Western Dental Journal*.

Sponge Tin.—Sponge tin is an interesting new filling material. For its use no undercutting is necessary; its cohesion increases in proportion to pressure, uniting in large pieces and compressing with a broad solid gold packed by hand pressure. When well condensed, finish with a corrugated ball burnisher, followed by a smooth burnisher.—F. C. BAUSH, *Items of Interest*.

Tin at the Cervical Margin in Gold Fillings.—Gold, by induction, imparts to tin in contact a preserving property; that is, there is an interchange of atoms which forms an alloy of gold and tin which is insoluble. This alloy is only about the thickness of one layer of tinfoil. * * * Tin in case of two or three leaves does not enter into combination, and it is subjected to galvanic action produced by the gold, and softening is the result. Do not risk gold and tin rolled together into a rope, but would feel safe with gold and tin placed together in alternate leaves and cut with scissors, provided the gold was placed against the dentin. An excess of tin will unbalance the alloy and allow disintegration.—S. B. PALMER, *International Den. Jour.*

Tin as a Filling Material.—Tin possesses antiseptic properties which do not pertain to gold for arresting caries in imperfect teeth, and owing to its therapeutic quality, and being a rather poor conductor, there is a strong probability of calcification taking place under it; in fact, many clinical cases have shown that under tin there is often a deposit of lime salts from the contents of the dentinal tubuli; this is called progressive calcification.—H. L. AMBLER, *The Dentists' Magazine*.

Silver-foil.—In teeth of faulty development, or in senile decay, where a non-conductor is desired, prepare the cavity as for any other metallic filling and place a good, thick covering of silver-foil in the bottom of the cavity, filling the balance as judgment may indicate.—L. S. CHILCOTT, *International Dental Journal*.

Sponge Tin and Cement as Filling Material.—Pulverized sponge tin and cement powder, mixed with the cement liquid, becomes hard and polishes with a metallic surface.—DR. SCHOURER, *Dental Cosmos*.

Tin-foil Filling.—Tin, when thoroughly condensed, has nearly the wearing qualities of gold. It can be worked very quickly, and moisture is not as fatal as to a gold filling. It is peculiarly congenial to tooth-tissue, and exercises a decided therapeutic influence upon it. The best way to insert tin is to use it in the form of cylinders, after the old method of using soft gold.—FRANKLIN BERNARD, *Dental Hints*.

Tin and Gold.—Having filled the cavity with tin cylinders, consolidated with hot pluggers, make the surface bright by cutting it smooth, removing only enough to allow the gold to cover and conceal the tin. Take a single thickness of cohesive gold-foil No. 2, anneal it, and it will unite with the tin by simple contact. No amount of forcing will do any good.—T. D. SHUMWAY, *Items of Interest*.

GUTTA-PERCHA FILLINGS

Sticky Gutta-percha Fillings.—Touch warmed gutta-percha, on its way to the cavity, with oil of cajuput. On account of the increased stickiness of the gutta-percha so treated, the filling actually cements itself to the walls of the cavity. It can even be applied wet, and so is of real value in treating a patient ill in bed, etc.—J. F. P. HODGSON, *International Dental Journal*.

Gutta-percha Fillings.—If shallow or saucer-shaped cavities are moistened with oil of cajuput, warm gutta-percha will adhere with special tenacity; the oil of cajuput is possessed of equal antiseptic qualities with the oil of eucalyptus, and is better for the above purposes.—GARRETT NEWKIRK, *Dental Review*.

Why Recurrent Decay is Less Frequent with Gutta-percha Fillings.—(1) Gutta-percha fillings do not, as a rule, remain as long in position as gold or amalgam. (2) There is less shock transmitted, in mastication, to the walls of the cavity, with consequent disintegration at weak points in the margin, than with a perfectly rigid filling as amalgam or gold. (3) The effect of mastication is to keep a gutta-percha filling pressed tightly against the walls of the cavity, especially at the cervical wall, even obliterating the space produced by the recurrence of caries.—W. D. MILLER, *Dental Cosmos*.

Evans's Gutta-percha Cement.—There is no question but that this is the cement *par excellence* for setting crowns. The ease with which it is manipulated, and the accuracy with which you can adjust either a crown or bridge, make it one of the most delightful adjuncts to our dental cabinet. For the final setting there is a varnish with which the root and surrounding parts are coated, and unless sufficient heat is used it is almost impossible to dislodge it.—DR. VAN WOERT, *Items of Interest*.

Gutta-percha Cotton.—Cotton saturated with gutta-percha by dipping in chloro-percha and evaporating the chloroform, when cut up into different pieces, will be found valuable for many purposes. For placing over arsenical applications a piece may be warmed and dipped in chloroform to soften. It may be used to give a close adaptation of matrices to the walls at cervical margin, etc., etc.—A. T. COUCHER, *Jour. Br. Den. Asso.*

Gutta-percha Fillings.—Evaporate the solvent from Canada balsam and moisten it with chloroform and line the cavity with this solution. Fill with gutta-percha, finishing the filling with tape moistened with chloroform. This makes a filling which will not leak, and which holds so fast to the cavity that it cannot be pried off.—A. M. HOLMES, *Atlanta Dental Journal*.

The Place of Gutta-percha.—Gutta-percha undoubtedly has great tooth-saving properties—properties not equaled by any other material. Its chief disadvantage is that it has not the hardness necessary to resist abrasion, but on protected surfaces, leaving out all esthetic considerations, it certainly has better tooth-saving qualities than any other substance.—W. F. LITCH, *Dental Brief*.

Moisture-tight Gutta-percha Fillings.—Dry the cavity well, insert a pellet of cotton saturated with absolute alcohol, remove and with warm-air syringe, evaporate the alcohol and varnish with a solution of common resin in chloroform. Warm the gutta-percha and pack with a cold instrument. Heat a thin-bladed instrument and pare off surplus. Polish with oil of cajuput.—*Dental Century*.

Gutta-percha as a Separating Material.—Gutta-percha expands in all directions, and care must be taken that it does not impinge upon the gum or it may cause absorption. Do not let it go too long.—DR. CRANDALL, *American Dental Journal*.

Handling Gutta-percha Points.—Pinch the larger ends of gutta-percha canal points with a pair of flat-nosed pliers. You can then handle them without difficulty with the operating pliers for inserting them in the canal.—A. W. THORNTON, *Dental Review*.

White Gutta-percha for Fillings.—Dissolve gutta-percha in chloroform, then make a solution of chlorid of lime, in which let it stand for a week. Filter, and expose to the sun for a week, and you will have a pure white gutta-percha.—MAX SICHEL, *Pacific Gazette*.

Gutta-percha Fillings.—After drying the cavity, saturate it with common resin, cut in chloroform, and press in heated gutta-percha. It adheres to the walls like cement, and does not pull away.—PROF. GRAY, *British Jour. Den. Science*.

Finishing Gutta-percha Fillings.—Hot vaseline is a solvent of gutta-percha, and is useful in trimming gutta-percha fillings. Apply the vaseline and use a warmed burnisher.—L. VAN ORDEN, *Items of Interest*.

Gutta-Percha Points.—Do not leave your gutta-percha points lying loose in the cabinet. Keep them in boracic acid; either the crystals or in solution.—DR. GANSBY, *Dominion Dental Journal*.

To Prevent Adhesion of Gutta-percha.—To prevent adhesion of gutta-percha or cement to instruments dip the point in talcum or powdered soapstone.—R. B. TULLER, *Dental Review*.

Gutta-percha used for filling is easily spoiled by keeping it in too warm a place. If kept in a solution of table salt it will keep for years.—*Dominion Journal*.

PREPARATION OF CAVITIES, CAVITY LININGS, ETC.

Cavity Lining Under Gold Filling.—Having prepared the cavity, dry with hot air, relieving the dentin of sensitiveness; coat with varnish, which prevents the return of moisture and also of sensitiveness. Remove excess of varnish with small pieces of rubber-dam, which leaves no lint behind. While the varnish is *tacky* start the filling with a piece of Watt's crystal gold No. 1, cut in slices of about 17 plate gauge, and in pieces of size to cover cavity. Anneal upon mica. Upon this foundation build up the filling, using foil in tape form, folded in flat layers.—S. B. PALMER, *International Dental Journal*.

Painless Excavating.—Inject a dosage of cocain with adrenalin right at the very apex of the tooth, producing after a few moments perfect anæsthesia of the nerve fibre. Especially valuable for the immediate extraction of a live pulp.—WM. HIRSCHFIELD, *Dental Review*.

Exposing the Cervical Margins.—Get as full an exposure of the cervical margins as possible before operating by packing the cavity and against the gum with gutta-percha, with the surface moistened with oil of cajeput to make it stick, leaving it for a day or two. The gutta-percha may be made to stay in place, if other methods are inadequate, by tying floss silk across the tooth and over the filling.—J. F. P. HODSON, *International Dental Journal*

Preparation of Oculusal Cavities.—The depth of the cavity pulpally is governed in the carious portions by the extent of decay and in the fissured portion by the depth of the fissure. Just when the bottom of the fissure is reached is sometimes uncertain, on account of the fine particles of tooth-tissue from the drill hiding it from view. This may be overcome by flooding the cavity with one of the essential oils, which will cause the fissure to show up dark, presenting its entire outline.—C. N. JOHNSON, *Cosmos*.

Benefits of Cavity Lining with Cement.—(1) It retains the filling; (2) it preserves the color of the tooth; (3) it prevents the metal from transmitting sensations of heat and cold to the pulp; (4) by its use we save valuable tooth structure, as there is less cutting for anchorage; (5) if caries should occur in any part of the tooth near the filling, it progresses less rapidly than if no cement had been used.—JAS. M. MAGEE, *Items of Interest*.

Proximal Cavities; the Gingival Seat.—A flat gingival seat is not only advisable, but it is absolutely necessary in proximal cavities in bicuspid and molars subjected to normal occlusal stress. It not only adds very largely to the stability of the filling, but enters very materially into the convenience, form, and method of extension for prevention at the gingivo-lingual and labial angles, which are most prone to recurrence of decay.—J. F. WALLACE, *Dental Era*.

"Extension for Prevention."—Extension for prevention has come to stay. We have learned that we must anticipate what may occur in the future. We no longer merely remove

the actual decay; we penetrate the dentin—not to obtain undercuts, but to prevent recurrence of decay. We know what portions of the tooth are liable to be imperfect in structure, and where future decay should be provided against. Extension is for prevention, not for retention.—H. W. MORGAN.

Cavity Lining.—The requisites for a cavity lining are hardness, non-conductivity and slightly antiseptic qualities. Zinc oxychlorid cement is without doubt the best barrier to bacteria of all the materials at our command. As a cavity lining it should be preceded with a thin coat of some resinous varnish to prevent the escharotic action of the cement fluid on the pulp.—B. L. THORPE, *Western Dental Journal*.

A Source of Failure in Proximal Fillings.—The removal of unsupported enamel is an absolute necessity, whether upon the occlusal surface, upon the buccal or lingual walls, or upon the gingival margin; not only because it has not sufficient strength to withstand the stress of mastication, but because it does not possess sufficient strength to build and condense gold against without fracturing or breaking under the force of condensation.—I. F. WALLACE, *Dental Era*.

Forming Cavities.—For permanent fillings with gold, after obtaining separation, the outline form, the resistance form, the retention form, the convenience form and the marginal form must all be carefully studied before and during the preparation of the cavity, when physical conditions are such as to warrant the expectation of permanency.—E. K. WEDELSTAEDT, *Dental Cosmos*.

Cavity Preparation.—In preparing a cavity for the insertion of a gold filling, the vibration which causes such unpleasant sensations to the patient can be prevented by holding the tooth firmly in a pair of forceps, or by placing a solid piece of metal against the tooth. Your patients will be grateful if you will try this on them.—G. A. KENNEDY, *Ohio Dental Journal*.

Dehydrating a Tooth.—While absolute alcohol and hot air afford not unsatisfactory methods of dehydrating a tooth, the usual chip blower is not free from objection. In the first place the heat is unequal; it is so easy to have it too hot, and so cause pain to the patient, and again, it is impossible to keep it thoroughly aseptic, its expiratory and inspiratory orifice being at the same point, while hosts of bacteria must be drawn into the bulb. The electric hot-air blast is a great improvement, but there is room for still greater improvement.—WM. SIMMS, *Dental Record*.

Cavity Formation.—The adaptation of filling to cavity is destroyed as thoroughly, if not as often, by a filling turning within the cavity as by its being forced out of it. While this may often be caused by the inability of the filling material to withstand the stress placed upon it, it is often due to faulty cavity formation, and should be carefully guarded against.—J. F. WALLACE, *Dental Era*.

Cavity Preparation.—We should do all we can to modify pain in all operations. In cavity preparation, for sensitive dentin use the ether solution of cocain called "Vapo-cocain" with gratifying results. Do not vaporize it, but place it in the cavity without thoroughly drying it and wait five minutes, sometimes reapplying it.—B. H. LEE, *Dental Register*.

Lining Cavities Under Amalgam.—Lining cavities under amalgam with tin is good practice. It presents an amalgam largely composed of tin, which, like tin, arrests caries. It also blends the elements in the alloy which always exist in amalgam, caused by cuttings not fully amalgamated.—S. B. PALMER, *International Dental Journal*.

To Make Smooth Cavity Margins.—Take an ordinary fine-cut plug-finishing bur of suitable size, dip in water and then in coarse carborundum powder. Use in the usual way, dipping it in the water and powder as often as necessary. Faster and better than any diamond burs.—W. C. GRAYSTOCK, *Items of Interest*.

Cavity Preparation.—The easiest method, the quickest method, the most successful method. Six rules: 1, obtain the outline form; 2, obtain the resistance form; 3, obtain the retention form; 4, obtain the convenience form; 5, remove any remaining decay; 6, trim enamel margins in relation to enamel prisms; bevel the cavo-surface-angles, and make the toilet of the cavity.—G. V. BLACK, *Dental Cosmos*.

Cavity Desiccation.—In drying out sensitive cavities with alcohol it is well to carry the pledget of cotton through the flame of a lamp, permitting the alcohol to burn for a second; then blow out the flame, and apply to cavity. Follow immediately with a pledget of dry cotton to absorb excess and prevent too rapid evaporation.—W. G. EBERSOLE, *Dentists' Magazine*.

Good Cavity Lining to be Used Under Metallic Fillings in Shallow Cavities.—Copal in equal parts of chloroform and alcohol. To this add an equal volume of hydronaphthol. If the cavity is very sensitive fill it with a paste made of zinc oxid and eugenol. Allow this to remain in the cavity several days. You will find in applying that it will harden under moisture, which makes it especially applicable in the class of cases referred to.—*Dental Brief*.

The Final Finish of Cavity Surface.—Bathing the cavity with alcohol is not the proper final step when cement is to be used, the action of alcohol leaving a slight film which will prevent a perfect attachment. Therefore after using alcohol renew the cavity surface with either burs or hand instruments, avoiding the margins.—C. N. JOHNSON, *Dental Review*.

Preparing Sensitive Cavities.—A comparatively painless method of cutting away a large body of sensitive dentin is to have the stones or burs run in water. I am able to do so-called heroic cutting with the stones run in water, so that the water is almost a running stream upon the bur or stone, and it can be run at a high rate of speed.—E. J. PERRY, *Dental Review*.

Painless Excavation.—If the preparation of a cavity is perfectly painless, look on it with suspicion. Do not fill with anything more than temporary gutta-percha. You may be sure your patient will return howling. Such cases invariably point to dead pulp. Better to open into the pulp-chamber at once, than to fill without doing so.—*Dental Office and Laboratory.*

"Extension for Prevention"—Extending the Cervical Wall Beneath the Gum.—The question is, first, whether we are justified in doing the cutting, and secondly, whether the patient will submit to it. Again, the patient may think that, instead of practicing "extension for prevention," we are practicing extension for *remuneration*, and be dissatisfied.—S. H. GUILFORD, *International Dental Journal.*

An Aseptic Cavity.—If the cavity be thoroughly dry, an application of absolute alcohol for a minute, followed by one of the essential oils, such as cloves or cedar, for two minutes, is all that is necessary. The oil will rapidly replace the alcohol, and though its antiseptic power is small, it is kept in place by the filling for so long a time that it is efficient.—W. J. LAW, *British Dental Journal.*

Cavity Preparation: Inlays and Fillings.—The one distinctive feature to bear in mind always is that a cavity for a filling should be of such a form that the filling when inserted cannot be lifted out of it, while the requisite of a cavity for an inlay is that the completed inlay may be inserted and removed at will.—C. N. JOHNSON, *Dental Cosmos.*

Cavity Preparation: Cutting Grooves.—In cutting grooves in the buccal or lingual walls, the cutting goes through the dentin and the enamel has not the support it ought to have. Another point: the canals of the dentin should never be cut across; the conservation of nutrient substance is a very important factor in the preparation of a cavity.—J. TAFT, *Dental Summary.*

Cavity Lining.—A good clear varnish for lining the bottom of cavities is made by dissolving pure clear copal gum in equal parts of alcohol and ether. To protect the pulp from thermal changes place a thin pad of asbestos paper on the bottom of the cavity while the varnish is still soft.—A. M. JACKSON, *Dental World*.

Preparation of Cavity Margins.—All cavity margins should be so shaped that, without leaving feather edges of filling-material all cut, enamel rods should be covered with the filling and all margins bevelled, but not rounded, and that there are no angles or corners left.—J. W. EGGLESTON, *Dental Summary*.

Enamel Margins.—The rule for enamel line finish must vary with the plasticity of the filling material. "As plasticity of filling material increases, so increase the property of adaptability, and as we approach the unyielding in filling material, so must we smooth or polish our margins."—CLYDE DAVIS, *Dental Summary*.

Opening Up a Tender Tooth.—In cases where a tooth was so tender that it was practically impossible to work on it, excellent success may be had by applying a separator, thus holding it firm. I wish to commend the use of hot water, thoroughly washing the tooth with it.—DR. BROCKWAY, *International Dental Journal*.

Cavity Lining.—When necessary to leave a portion of partially decayed dentin, to avoid exposing the pulp, combine equal parts iodoform and zinc oxid and mix with the phosphoric acid. I have never, to my knowledge, had a pulp to die under a filling when the cavity was lined in this way.—T. B. HINMAN, *Ohio Dental Journal*.

Carbolic Acid in the Preparation of Cavities.—Wiping a cavity with an alcohol-saturated solution of carbolic acid will show very clearly whether all carious tissue has been excavated, and will bring out in relief, so to speak, some crevice that might otherwise possibly be overlooked.—*Dentists' Magazine*.

Cavity Lining and Amalgam.—To prevent discoloration of tooth tissue from an amalgam filling, burnish to place a mat of gold and platinum foil, having first varnished the side of the mat that comes in contact with the tooth wall. Asbestos-felt can be employed in the same manner.—B. L. THORPE, *Western Dental Journal*.

Cavity Varnish.—Dissolve some copal in equal parts alcohol and chloroform; add an equal volume of hydronaphthol. This forms a very adhesive and sticky antiseptic varnish, free from all caustic properties.—*The Stomatologist*.

Preparing Sensitive Cavities.—The first application of the bur can be made absolutely painless in the most highly sensitive cavity by simply taking ethyl chlorid on the bur point and bringing it quickly into contact with the tooth.—J. M. GALE, *British Dental Journal*.

Preparation of Canada Balsam for Lining Cavities.—Place the balsam in a porcelain dish and expose to low heat for several hours, so that when cool it will be hard and friable. Place in a small bottle and add chloroform until you have a thin fluid.—A. OSGOOD, *Dental Cosmos*.

Principles of Cavity Preparation.—First, establish cavity outlines; second, remove softened dentin; third, give cavity proper shape; fourth, trim and smooth enamel margins; fifth, the cavity toilet.—*Dental Pedagogics*.

Varnishing Cavities.—After varnishing a cavity, and before introducing the fillings, remove excess of varnish by using small pieces of rubber-dam. It takes up the varnish and leaves no lint behind.—J. L., *Australian Journal of Dentistry*.

An Antiseptic Cavity Varnish.—Select gum copal, one-half ounce; ether, one ounce. Dissolve and filter through paper. Add hydronaphthol, fifty grains, and add enough ether to make the whole measure one ounce. Keep in well-stopped bottle.—*Dental Era*.

Cavity Cleansing; Hydronaphthol.—For cleansing a cavity previous to the introduction of a filling use a solution of seven grains hydronaphthol to an ounce of alcohol.—G. MONROE, *Dental Review*.

To Open Fissures.—To make a rapid cutting drill to open fissures with take a round bur (No. 3 to No. 6) and grind it to a three-cornered shape point.—F. C. NOYES, *Dental Brief*.

Quick Method of Drying Cavities.—Apply a small pellet of paraldehyd and allow it to remain a minute or two. Evaporate with hot air. Paraldehyd is more volatile than absolute alcohol, and dries quickly.—W. H. SCHOENING.

FILLING TEETH—GENERAL REMARKS

Filling of Distal Cavities in Bicuspids and Molars.—These cavities, more frequently than others, are improperly filled on account of insufficient working room; and on this account also, these fillings are improperly shaped and imperfectly finished. It is desirable, whenever possible, that the filling should completely close the interdental space at its occlusal margin so as to prevent food wedging between the teeth during mastication; it is also important that the surface of the filling, while fully flush, should not extend beyond the surface of the tooth, or, as we term it technically, "overhang."—D. LINLEY PALMER, *Dental Brief*.

Contouring the Interproximal Space.—After filling a mesio-occlusal cavity in an upper second bicuspid, we may know if the inter-proximal space is contoured properly by drawing the cheek to one side and then asking the patient to close the mouth and then raise the tongue against the bicuspids. If the saliva runs through the gingival space the work has been properly made. Contouring properly the inter-proximal space is not a theory, as so many seem to think, but it is a condition which must receive much consideration from all who desire to make the highest grade of dental work.—E. K. WEDELSTAEDT, *Dental World*.

Polishing Fillings.—One of the most difficult things we have to do is to polish fillings in molars and bicuspid. You can not be positively certain that you polish the margin at the concavity of the filling if you fill the entire cavity before you polish there. Fill it about one-third the way; then take a chisel or something and thoroughly remove all excess of gold from the margin. Then take a right-angle disk-carrier, and with an instrument press the disk at the concavity, and, letting the edge of the disk extend up under the gum, you can polish it more nicely. Polish the upper margin before you complete the operation, to make a good filling.—FRANK HOLLAND, *Dental World*.

Full Contour.—If we fail to restore the tooth to its full normal contour, and the teeth fail to fall together, thus not closing the space, this open space is continually inviting the entrance of fibrous foods, which, when forced upon the gum septum in the process of mastication, produces great annoyance and often severe pain, resulting in the absorption of the gum septum and often of the alveolar process; then, pockets are formed in which food decomposes, often resulting in the destruction of tooth structure at these points. This is one of the very important reasons for restoring the tooth to full normal form.—I. F. WALLACE, *Dental Era*.

Burnishing Fillings.—In burnishing gold fillings, anchored with cement, it is better to keep the instrument warm—the heat of the instrument has a tendency to hasten the hardening of the cement, so that you seldom wait for that. * * * * Burnishing gold on the cement allows you to work on walls that you would not think of working on with a mallet, and you can work with much less room than you can with a mallet.—W. I. BRIGHAM, *International Dental Journal*.

Polishing Fillings.—Keep a cake of calcined magnesia in the cabinet and when the last disc of fine cuttle-fish is to be used, touch it to the magnesia and you will give the gold a brilliant polish.—*Dental Hints*.

The Interproximal Space.—A tooth should never be filled before sufficient space has been obtained to normally contour the tooth and properly reproduce the interproximal space. Flat fillings with broad contact surfaces and little or no interproximal space cause constant annoyance to the patient from food crowding in between the teeth, producing finally an active gingivitis, pyorrhea ending the life of the tooth.—J. V. CONZETT, *The Dentist's Magazine*.

The Final Finish of Gold Fillings.—In putting on the final polish use a tmin cuttle-fish disc, and lastly crown paper disc. There is a chamois disc, with a celluloid back, which is the best thing for places where it can be used, as it takes out the slight scratches of crown paper, polishing so smooth that even with a magnifying glass you can distinguish nothing but a smooth surface.—W. M. MEGGINSON, *Ohio Denal Journal*.

Polishing a Filling.—A filling must be polished, not for æsthetic reasons only, but for hygienic reasons as well. The débris of food will not collect upon a polished surface, nor will the masses of bacteria as easily find a resting place there. After the coarser discs use cuttle and crocus discs, followed by rubbers or felt with pumice and whiting.—J. V. CONZETT, *Dental Review*.

To Finish and Polish Occlusal Fillings.—A rubber disc will cut faster, is more easily handled, and will polish just as smooth as the best moose-hide points that can be bought. The rubber disc is cut out of rubber packing having a layer of rubber on the outside of a piece of canvas. It will hold the pumice and cut faster than anything else you can get.—W. M. MEGGINSON, *Ohio Den. Jour.*

Restoration of Contour.—In restoration by fillings round them out, even if you have to round them out abnormally, or to an extra amount. If this is not permitted on account of overlapped teeth the teeth had better be cut off and crowned with teeth that will not so overlap.—C. L. HUNGERFORD, *Western Dental Journal*.

Proximal Cavities: The Contact Point.—When the tooth settles back to its original position, after separating and filling a proximal cavity, the contact point will be subject to the same accumulation of bacteria that caused decay in the first instance, and unless we extend the margins to where they are cleaned by the friction of the tongue, cheeks, brush, or by the food in the process of mastication, we can expect nothing but a recurrence of decay.—J. F. WALLACE, *Dental Era*.

Filling Deep Cavities.—When decay has so encroached upon the pulp that its death would almost surely follow the insertion of a metallic filling, porcelain will give almost absolute security. The pulp will remain alive and the tooth comfortable. Clinical experience has taught us that porcelain is the best non-conductor of thermal changes and practically restores the tooth to as nearly normal a condition as though decay had never occurred.—W. T. REEVES, *Dental Summary*.

The Adhesive Filling.—Practically, gold has such a tendency to bridge that it is almost impossible to avoid infinitesimal air-spaces between the tooth and filling, but by having a soft cement lining into which the gold is squeezed all of the dangerous air-spaces are avoided and when infection does attack the cavity-margin it cannot penetrate to the dentin. While the final hammering may possibly fracture the enamel rods on its edge, and microscopic decay start, when it becomes apparent we can repair it with a firm assurance that this defective margin does not connect with any leak by which infection may have started to undermine the foundations of the filling.—JOSEPH HEAD, *Dental Cosmos*.

Immunized Carious Dentin.—To render immune to any further action of bacteria the layer of decomposed dentin over the pulp, dehydrate thoroughly with bibulous paper, chloroform and hot air; apply bicarbonate of soda and dehydrate again; apply as antiseptic a concentrated carbolic

acid—trichloric acid—10 per cent. solution of formaldehyd. When thoroughly saturated fill temporarily with oxysulphate. After 24 to 48 hours renew the antiseptic treatment, place in a layer of medicated cement (preferably thymol), cover with gutta-percha, fill with oxyphosphate, and complete with metallic filling.—R. H. HOFHEINTZ, *Items of Interest*.

Proximal Filling in the Upper Anterior Teeth.—Approach from the lingual side seems to combine more advantages and to have less objection than any other method. Disfiguring is more certainly avoided and durability increased. Access is more readily and completely secured and needless pain prevented.

The operator works with the mouth-mirror throughout, thereby seeing all parts and saving both himself and the patient the strain of an uncomfortable position.—E. S. HATHAWAY, *Dental Cosmos*.

Restoration of Bicuspids.—When the palatal wall has broken away, the tooth being pulpless, the contour can be restored as follows: Cement into the root a strong metal pin, leaving it nearly as long as the finished palatal surface is to be. Cut away all soft and frail edges and place around the tooth a temporary matrix, which fill carefully and solidly with amalgam, using it very plastic about the pin and broken walls but hard and dry in completing the operation. When perfectly hard remove matrix and shape and polish the amalgam.—E. L. DAVENPORT, *International Den. Jour.*

The Choice of Filling Materials other than Gold.—(1) Use cement in such teeth as are so wasted that sufficient anchorage cannot be obtained for a filling lacking adhesive qualities. (2) Gutta-percha in obscure and inaccessible cavities; in teeth of soft structure; in buccal cavities at gum margin, and in deciduous teeth. (3) Amalgam in posterior teeth, when cavities are so large that strong walls cannot be obtainable without devitalization of pulps, and where pocket-book will not permit extensive operations in gold.—F. T. VAN WOERT.

Formaldehyd in the Prevention of Decay.—With the rubber-dam so applied as to perfectly protect the soft tissues, the surface of the teeth is first cleaned with 3 per cent. pyrozone. Formaldehyd, varying from 2 to 40 per cent. strength, according to the surface, is then applied to cavities, carious surfaces, and healthy portions. After several applications of formaldehyd, dry the surface and coat with a saturate solution of paraform in chloroform, to which has been added sufficient hard Canada balsam to make the solution a thin varnish. When the varnish has nearly dried, cavities may be filled with amalgam, gold, gutta-percha, or cement.—A. C. HART, *Pacific Med. Den. Gazette*.

Recurrence of Caries Under Good Fillings.—When caries recurs under fillings which have been in place for ten, fifteen or even twenty years, about the walls of which no leakage has occurred, and yet under which is found softened, discolored dentin, it must be admitted that the cause is an internal one, developed as the consequence of the presence of microörganisms in the tubuli of an area of dentin, which appeared to the eye and touch, healthy.—H. A. SMITH, *Dental Digest*.

Fillings for Weak Teeth.—Try in weak teeth a compound filling of copper amalgam underneath and another amalgam on the surface. This succeeds if the copper amalgam is allowed to set hard before the facing amalgam is added. If put in at the same sitting the latter does not set properly, probably from excess of mercury absorbed from the copper amalgam.—R. STANWAY PURVIS, *Journal of the British Dental Association*.

Filling Materials.—The teeth are living organs, and when attacked by disease their treatment demands that any material, placed in contact with an exposed surface, shall not obstruct Nature's process of repair. The internal structure should be therapeutic, with a covering for protection. Tin, by reason of its peculiar physical characteristics, meets this demand better than any other material known at present.—T. D. SHUMWAY, *Items of Interest*.

Fillings: Causes of Failure.—Unless we study the causes of our failures and the best methods of controlling and overcoming them, and make such changes as are necessary to accomplish these results, we cannot hope to gain that degree of perfection for which we are striving. It behooves us to use the utmost care in every detail up to the finished filling, that it may fulfill its mission of saving the tooth for future usefulness.—J. F. WALLACE, *Dental Era*.

The Arrest of Decay by Fillings.—The metallic salts furnished from amalgam enter into the dentin and, with the organic portion of the tooth, form an insoluble lining which arrests further decay. Tin is better than amalgam, because the stannic oxid is white and does not discolor dentin. Copper, as an element in alloys, furnishes these properties more perfectly than silver or tin.—S. B. PALMER, *Dental Digest*.

A Combination Filling.—In the use of soft gold built into a layer of soft cement, followed by cohesive foil and, when subject to abrasion, finishing with gold platinum foil, the good qualities of each ingredient are magnified, and the faults of each minimized.—CLYDE DAVIS, *Western Dental Journal*.

Recurrence of Decay.—No tooth may be considered safe from recurrence of decay around proximal fillings unless the cervical wall has been carried sufficiently rootwise to bring that portion of the filling under the gum, and the cervico-labial and cervico-lingual angles extended to a point where these margins of the filling are kept clean by friction.—C. N. JOHNSON, *Dental Cosmos*.

Securing Certainty in Covering Cervical Margins.—Between matrix and tooth place a mat of tin and gold and wedge firmly to place. The portion of the mat which extends into the cavity is then laid against the cervical wall, and forms the first layer of the filling. Also overcomes any danger of checking the margins in applying matrix.—F. W. STEPHAN, *Dental Review*.

Filling Material.—The cause of decay is external, the recuperative force is from within; the operation of filling should be based upon a recognition of these processes of nature, and the material placed in contact with the dentin be one in correspondence with the amorphous substance with which the tubes are filled. Of all materials which can be employed, tin most nearly meets these conditions, and its use is based on a theory of practice scientifically correct.—T. D. SHUMWAY, *Dental Digest*.

Temporary Filling.—Absorbent cotton saturated with cement mixed to a creamy consistency makes an excellent temporary filling material which will last for months. If required for only a short time nearly fill the cavity with dry cotton before inserting the above. This will facilitate the subsequent removal of the filling.—R. E. SPARKS, *International Dental Journal*.

Decalcified Dentin Left Under Fillings.—It has in large part been disorganized; it is packed with microorganisms, and infiltrated with poison; a mass of dead microorganisms is by no means inert; from their dead bodies come the most virulent poisons. It would seem to be a fruitful field of research to determine the kind of agent required to destroy the microorganisms and at the same time neutralize the poison.—C. N. JOHNSON, *Dental Cosmos*.

"Fixation Work."—If it is wanted to fix a post or set-pin in a funnel-shaped cavity or any kind of fixation work in a confined space, and when great strength is required, fix the pin, or whatever it is, with cement, and while the cement is still soft force into it some amalgam and finish it off with an entire surface of amalgam. This will give the most perfect result attainable as regards permanence and strength.—HARRY BALDWIN, *British Dental Journal*.

White Decay.—If white spots of decay on front teeth are treated by burnishing with a steel burnisher, moistened with pyrozone, it will prevent recurrence of decay and save the teeth without filling.—PERCY D. GREENE, *Dental Cosmos*.

Superficial Decay.—In cases of superficial decay near the gum margin—only a white streak—rub nitrate of silver on the spots and play hot air on it from the syringe. Paint the gum with tincture of iodine, which will form iodide of silver, and prevent the spreading of the silver nitrate.—Dr. VAN ORDEN, *Pacific Gazette*.

Treatment of Decalcified Dentin in Bottom of Cavity.—Apply sufficient oil of cassia to permeate all the softened dentin. Dry the surface with chloroform; fill with aristol and chloro-percha, which becomes hard and glassy when the chloroform has evaporated. Finish with cement.—R. H. COOL, *Pacific Gazette*.

Filling from the Lingual Surface of Upper Incisors.—Crystal mat gold offers great advantages from the tendency of the pieces to stay where they are put, instead of falling, rolling and tipping, as in the use of gold foils. Use round-pointed pluggers with a rolling motion, spreading the gold like a paste, thus giving a uniform surface.—N. H. BISHOP, *Ohio Dental Journal*.

Arrest of Decay.—In permanent teeth, too tender or too infected for excavation, powdered nitrate of silver rubbed into the cavity before filling has been very effective, one case having been under observation for five years and still satisfactory.—MR. WALLIS, *British Dental Journal*.

When Caries Extends to the Bifurcation of the Roots.—Make a mat of two or three layers of tin foil, place it at the bifurcation and use it as a base for filling the rest of the cavity with amalgam.—H. L. AMBLER, *Pacific Gazette*.

Protection of Coronal Borders.—When the cavities are not exposed to view, a 50 per cent. solution silver nitrate may be applied to the cervical borders of mesial and distal cavities in molars and bicuspid, and will do much toward preventing decay at that point. By means of a few shreds of cotton on a broach it may be applied without retaining other portions of the tooth.—T. B. HINMAN, *Ohio Dental Journal*.

A Tight Filling.—The chief object is to make a tight filling; a filling that will not leak, and without loose places around it; that can be done with amalgam in many cases when it cannot be done with gold or anything else.—S. C. G. WATKINS, *Items of Interest*.

To Prevent Recurrence of Decay.—When the cavity is ready for the filling apply formalin (forty per cent.) for five minutes. Then dry and coat with varnish of Canada balsam containing two per cent. of formalin. Then fill as usual.—A. C. HART, *Items of Interest*.

Air in Fillings.—I may surprise some of you when I say that most of your amalgam fillings are from 12 to 16 per cent. air. The same is true of your gold fillings, but with amalgam it is almost impossible to get the air out.—G. V. BLACK, *Dental Review*.

Failure of Fillings.—From both observation and experience, I will say that the lack of proper preparation of a cavity is responsible for more failures than is the material with which it is filled.—JOHN CAMPBELL, *Dental Era*.

Immunity from Caries.—We can secure immunity from decay of the teeth, but it must be by local applications, local care and treatment. We must destroy the toxins which cause the disease.—J. Y. CRAWFORD.

A Cause of Failure.—Many a filling that would otherwise be a failure can be saved by grinding down an opposing cusp. This is a little point, but it can save many a filling.—F. F. FLETCHER, *Dental Era*.

Recurrence of Decay.—The blame for recurrence of decay lies with both operator and patient. The patient's blame lies in the fact that not one in fifty brushes his or her teeth thoroughly, and decay recurs more frequently because of dirty teeth than from any other one cause.—J. N. CROUSE, *Dental Digest*.

CONSERVATIVE TREATMENT OF THE PULP

Softened Dentin Over the Pulp.—The superficial layers of softened dentin are filled with bacterial forms. The deeper layers are not infected, the decalcification precedes the invasion of the bacteria within the dentinal tubuli. Such dentin has evidently not lost its entire vitality; it is often hypersensitive. A thin layer of such dentin, if left over the pulp, impregnated with some strong antiseptic, will not cause recurrence of decay.—H. PRINTZ, *Dental Review*.

Pulp Capping.—Dry the cavity thoroughly, insert a little thin chloro-percha, distributing to all the walls. Wipe out excess, leaving only a thin coat, from which the chloroform should be thoroughly evaporated. Then flow in some thin oxyphosphate cement and let it harden. By this method no pressure is made upon the pulp and the oxyphosphate cement is not brought into contact with thin dentin. Any inflammation of the pulp should be reduced previous to insertion of filling.—G. H. KITTELL, *Western Dental Journal*.

Formagen Cement for Pulp Capping.—Formagen consists of a powder, principally calcium carbonate, as a medium and liquid—carbolic acid and eugenol, each saturated with formaldehyd vapor, which is gradually given off when the two are mixed together. Remove all carious tissue from over the pulp; place cement in a concave disk and apply over the pulp. Cover with oxyphosphate cement and fill permanently.—H. F. BROOKS, *Journal B. D. A.*

Pulp Capping.—In many cases the capping of the dental pulp is good theory but poor practice. When the pulp is exposed from caries, and inflamed, the safest capping, as a rule, is a devitalizing agent left long enough that the pulp's life is destroyed, followed by its removal and proper replacement with some substance possessing both antiseptic and homogeneous properties.—BURTON LEE THORPE, *La Odonto-Stomatologia*.

Pulp Capping.—When a healthy pulp is exposed in excavating, attempt should always be made to save it; sterilize and cap immediately, preventing infection through access of saliva, and do not allow the surface to dry by long exposure to the air. I invariably use oxysulphate of zinc, in thin paste, placing it in contact with the surface of the pulp. A small quantity of finely pulverized thymol, mixed in the cement, will secure slight permanent antiseptic action. Cover the oxysulphate with oxyphosphate. Allow a year to elapse before permanent filling.—W. J. MILLER, *International Dental Journal*.

Protection of Pulp from Thermal Changes in Deep Cavity.—Thoroughly dry with absolute alcohol, then coat with common rosin, dissolved in chloroform. Cut thin pieces of asbestos felt, just large enough to cover bottom of cavity. Moisten with wood creosote or campho-phenique, and cover one side with a mixture of oxid of zinc and iodol, and vaselin or albolin. Place over bottom of cavity. Fill as desired.—J. G. TEMPLETON, *Dental Review*.

Discs for Pulp Capping.—With the rubber-dam punch and No. 60 tinfoil a disc can be punched out that is admirable for capping slight exposures. It punches out a small cone, and by taking hold of the cone at the apex with pliers you can insert chloro-percha, and being in the form of a tiny cap, can be readily placed just where it is wanted, without making pressure upon the exposed pulp.—E. B. LODGE, *Ohio Dental Journal*.

Successful Pulp Capping.—Pulp exposure in occlusal cavity capped in 1866; cap of heavy gold foil filled with a paste of hypophosphite of lime and glycerin, covered with gutta-percha; cavity filled with amalgam. Opened in 1872; exposure obliterated and adjacent dentin normally sensitive. In January, 1897, pulp exposure from caries on proximal surface at the cervix; no indication of pulp degeneration.—LOUIS JACK, *International Den. Jour.*

Hydronaphthol as a Pulp Capping.—To avoid the removal of the layer of softened dentin, which, if removed, would probably necessitate the removal of the pulp, mix equal quantities of hydronaphthol and cement and place as a capping for the layer of softened dentin, allowing it to set. Then proceed with the filling. The hydronaphthol arrests the action of putrefaction germs.—A. W. McCALL, *Federal Dental Journal*.

Pulp Capping.—A pulp cap must be a disinfectant; an antiseptic; an antiphlogistic, and a non-conductor of thermal changes. To secure the combination apply rubber-dam; remove all débris; saturate cavity with creosote and wipe dry; introduce iodoform, followed by copal-ether varnish a little thicker than cream. Cut asbestos paper to cover; press gently down and varnish over. Oxyphosphate of zinc over this.—W. A. LEE, *Ohio Den. Jour.*

A Successful Filling Over an Exposed Pulp.—In a case in which the pulp was so clearly exposed that the pulsations could be seen an application of lacto-phosphate of lime was made, and an oxychlorid filling over that. Two years later the filling was removed and the pulp found covered with secondary dentin, when a gold filling was malleted in. That was years ago, and the tooth is still alive.—DR. ANDREWS, *International Dental Journal*.

Pulp Protection.—Oxysulphate of zinc is one of the best pulp protectors; easy of adaptation, non-irritating alike to sensitive dentin and to the pulp. When the pulp is nearly exposed, place a small amount of thinly mixed oxysulphate over the bottom of the cavity, allowing a few minutes for it to set, and cover with oxyphosphate of zinc.—G. F. CHENEY, *Dental Cosmos*.

Pulp Capping.—There is an old rule laid down in one of the text-books, which, if followed, would save a lot of time and trouble, viz., cap only where the exposure is small, the dentin healthy, and the patient robust.—W. R. BIRKETT, *Journal British Dental Association*.

Pulp Protection Under Gold Fillings.—Where the tooth contains a vital pulp needing more protection than cement alone would afford, it is advisable to put in a wafer of gutta-percha coated on the under surface with a good cavity varnish, having made with a ball burnisher a concavity in the under surface of the wafer.—IRA J. COE, *Dental Cosmos*.

Cavity Lining for Pulp Protection.—Gum sandarac, dissolved in alcohol, used quite thin, leaves a semi-opaque film upon the cavity walls, which is non-conducting, non-irritating, insoluble, and more in harmony with dentin than any metallic substance. Allow five or ten minutes for hardening, which may be hastened by hot air.—G. F. CHENEY, *Dental Cosmos*.

For Exposed Aching Pulp, Mentho-phenol.—One part phenol crystals to three parts menthol, melted together, dissolves readily in alcohol, ether, chloroform and most oils, and is a solvent of iodoform and aristol. Possesses decided analgesic qualities. If applied to an aching pulp the pain will subside promptly.—WM. SHAEFFER, M.D., *International Dental Journal*.

Pulp Capping.—Adjust rubber-dam, cleanse cavity thoroughly with warm water and 4 per cent. solution formalin, gently press over exposure small cutting iodoform gauze dipped in carbolic acid, flow over gauze paste of carbolic acid and aristol, seal up with non-irritating cement, and fill to suit case.—J. A. RICHARDS.

Pulp-capping.—Place a little iodoform and glycerin over a tender pulp, and a little asbestos paper over that; then place in oxyphosphate and let it set. Over that you can put in any filling you choose, and it will not irritate the pulp.—H. J. MCKELLOPS, *International Dental Journal*.

Pulp Protection Under Oxyphosphate Fillings.—Line the cavity with Canada balsam and tin foil, pressing the tin foil to place with cotton till a good adaptation is obtained.—W. W. SMITH, *Dental Cosmos*.

Pulp Protection.—A paste of hydronaphthol with oxid powder and a couple of drops of oil of cloves and creosote is excellent practice to prevent consequent irritation that might otherwise follow the insertion of a filling over nearly exposed pulp.—GRAFTON MONROE, *The Bur.*

Pulp Protection Under Oxyphosphate Fillings.—Oxyphosphate will destroy the life of the pulp when placed in a deep cavity. To prevent this line the entire cavity with gold foil.—E. D. DOWNS, *Dental Cosmos.*

THE RUBBER-DAM

Compound Cavities: The Matrix.—When the ravages of caries demand that a filling shall be carried far beneath the gum, the demand is for amalgam, because it can be quickly and accurately packed into such places, but it is so easily displaced before hardened that it is safer and wiser always to use a matrix. For a continuous tight matrix I use the band material familiar to orthodontists, and solder with soft solder. This may reassure the operator against disturbance during the setting of the material, as it can be left in position without discomfort.—R. OTTOLENGUI, *Items of Interest.*

Preparation for Adjustment of Rubber-dam.—The tissues against which the dam is to rest should be rendered as surgically clean as possible, through washing with warm sterilized water; any debris in the interproximal spaces or on the crowns of the teeth should be removed; the dam should be washed with soap and water and after drying rolled in antiseptic French chalk; the lips, if cracked, and any sores on the face covered with a salve of some kind—vaselin, cold cream, resinol, etc., according to conditions, and napkins or other means used to protect the face from contact with the dam and holders and to secure it in place.—E. K. WEDELSTAEDT, *The Dentists' Magazine.*

Rubber-dam Matrix.—When adjacent cavities are to be filled with cement, a neat matrix is found in a narrow ribbon of rubber-dam drawn taut over the adjacent tooth until the cavity is filled—then reversed over the new filling until the second cavity is filled—using one mix of cement for the two cavities. With a little tension the strip may be trimmed quite close, leaving what remains as a separator until the next day, when there will be no trouble in properly finishing the fillings.—J. T. DANFORTH, *Ohio Dental Journal*.

Holding Rubber-dam in Place.—Instead of ligating the teeth to prevent the dam from sliding toward the occlusal surfaces, use rubber wedges of suitable size, carrying them into the proximal spaces and against the gingival borders. The rubber will thus be held in position, moisture will be prevented from oozing, and the teeth will be slightly separated, sufficient to allow of properly finishing the filling, if mesial or distal.—HERMANN BURDACH, (Trans.) *Dental Cosmos*.

The Rubber-dam.—The average dentist should have the dam applied to his own teeth by some careless man at least once a week. He would then use care in applying it for others. If in cold weather you would warm the clamp your patient would bless you. If in carrying the ligature between the teeth you are careful not to let it strike the gum suddenly, your patient will appreciate it.—F. M. SMITH, *International Dental Journal*.

Application of Rubber-dam.—In a proximal cavity reaching below the gum margin, place a piece of asbestos paper moistened with oil of cloves on the pulp; then a small piece of cotton moistened slightly with carbolic acid is applied against the gum, and over this a larger piece of cotton saturated with a thick solution of tincture of benzoin, packing it tightly. This will force out the gum in twenty-four hours, with no pain to the pulp.—W. A. SPRING, *Dental Review*.

Repairing a Leak in Rubber-dam.—Place a wad of bibulous paper underneath the torn place, paint a piece of thin vulcanizable rubber with amber cement, and apply to the torn surface of the dam, to which it adheres perfectly, without any curling up of the sticky edges so annoying when an attempt is made to use rubber-dam in this manner.—W. E. WALKER.

Wire Rubber-dam Ligatures.—To force the dam and gum out of cavities extending deeply under the gum, not always successfully accomplished by the ordinary clamps, try using a fine soft wire, doubled and tightly twisted, as a ligature. Wax the wire to make the dam stick to it. Force dam and wire above cavity margin with a small chisel.—WM. MITCHELL, *Items of Interest*.

To Correct the Unpleasant Odor and Feeling of Rubber-dam.—Wipe it perfectly clean with a damp napkin or sponge; dry thoroughly; dust with borated talcum powder. Rub it over lightly with the fingers and you have a smooth, slightly-scented satin surface, which will readily pass into the closest spaces without soap or cosmolin.—J. C. CARY, *Dental Headlight*.

To Facilitate the Passage of Rubber-dam Between the Teeth.—When the teeth are very close together, smear a little glycerin around the holes in the dam. This answers the same purpose as the soap usually recommended, and has not the unpleasant taste of the latter if it comes in contact with the tongue.—R. E. SPARKS, *Dominion Dental Journal*.

Application of Clamp.—In case of cavities extending under the gum, a little powdered orthoform will relieve the pain caused by applying the clamp.—C. H. BLACKBURN, *Items of Interest*.

Application of Rubber-dam and Clamp.—If vapocain is rubbed back and forth on the gum, the clamp may be applied with little or no pain.—C. F. GORHAM, *Dominion Dental Journal*.

Adjusting the Rubber-dam.—If the gums are washed with oil of cloves immediately before adjusting the rubber-dam, the pain incident to the application of clamps or ligatures is very greatly minimized.—E. K. WEDELSTEADT, *The Dentists' Magazine*.

"Punching" the Rubber-dam.—In a clinic given by Dr. G. D. Moyer before the National Dental Association, the rubber-dam was first marked with blue pencil and the holes burned through the dam, an improvement on the dam punch, each hole being reinforced with a rim of melted rubber.—*Dental Cosmos*.

Rubber-dam and the Ligature.—The fact that the ligature may give pain should influence the operator to dispense with it whenever possible. If the dam is of proper weight and skillfully adjusted it is the exception rather than the rule for a ligature to be required.—C. N. JOHNSON, *Dental Cosmos*.

To Apply Rubber-dam to Lower Incisor Teeth.—First tie a ligature around the teeth on which you desire to put the dam; then apply the dam and ligate in the usual way. This prevents the stretching of the dam over the ligature from pressure of the lower lip, as the dam is held firmly between the two ligatures.—J. C. MONTGOMERY.

To Adjust the Ligature around the tooth when the rubber-dam is applied, a narrow foot-plugger makes an excellent carrier; the serrations of the plugger prevent the slipping of the ligature while being carried to place.—*Dental News*.

The Rubber-dam.—A large field for operations should be provided for in the adjustment of the dam. Thoroughly desensitize the gum tissue and the rest is easy, both for the patient and operator.—W. J. JACKMAN, *The Dentists' Magazine*.

Protection of the Gums in the Application of Clamps.—

In a great majority of cases soreness of the gums from the application of an ill-fitting clamp may be prevented by brushing the gum around the neck of the tooth with tincture of calendula, which has the valuable properties of preventing soreness and suppuration and of inducing the rapid development of healthy granulation.—*Dental Cosmos*.

Application of Rubber-dam Clamp.—If, when applying the dam clamp, you fold two little pieces of muslin and lay them between the clamp and cheek, your patient will appreciate it.—F. MILTON SMITH, *Dental Era*.

The Use of Clamps.—A right and left clamp for the molars, when used with napkins folded under them, will keep the teeth dry long enough for almost any operation, except a large gold filing. They leave both hands free, and for dressing root-canals and inserting plastic fillings they are invaluable.—HOWARD T. STEWART.

To Prevent Irritation of the Gum by Clamps, etc.—The transparent oiled silk of the drug stores is a very serviceable material to put between the gum and irritating regulating fixtures, rubber-dam clamps, etc.—B. H. TEAGUE, *Am. Den. Weekly*.

Securing the Rubber-dam.—When the rubber-dam will not stay where we want it under the gum, use fine copper wire, and it will readily adapt itself just where you desire it to stay.—L. W. JORDAN, *Dental Summary*.

To Secure Rubber-dam Clamp on Conically-shaped Tooth.—Sandarac varnish on the tooth will give a surface over which the clamp will not slip.—J. A. McCLAIN, *International Dental Journal*.

Punctured Rubber-dam.—Put a pellet of cotton wool in the hole and cover it with sandarac or cover the hole with a piece of surgeon's plaster.—R. H. MANNING, *British Dental Journal*.

THE MATRIX

The Matrix for Plastic Fillings.—Plastic fillings must have surrounding walls to resist the pressure necessary in packing. When missing an “all-around” matrix is best for badly broken-down teeth, letting it remain until the next day if amalgam is used in restoration. Thirty-four to thirty-six gauge German silver is the most satisfactory material; its rigidity is sufficient, yet can be readily bent to contour.—*Western Dental Journal*.

Adaptation of Matrix to Cavity.—Press the matrix material to general form of cavity; then stretch loosely over it a strip of thin rubber-dam and lay on it, over the cavity, a small quantity of ordinary putty, rather stiff. Press into the cavity carrying it to the bottom, and with considerable force carry it into every part. Release the pressure and the elasticity of the rubber will lift the putty from the cavity and leave the matrix in position.—W. HALLOWAY, *Items of Interest*.

Covering Cavity Margins When Using Matrix.—Fold over the matrix, before placing in position, several layers of non-cohesive gold, having sufficient space to slip it between the teeth, but tightly wedged in. Then insert an instrument between the gold and the matrix, about the centre, and force the gold carefully back into the cavity so as to cover the floor and walls as far as it will go. The gold is thus carried beyond all margins, which are safely covered.—R. B. TULLER, *Dental Review*.

The Band Matrix.—Many cases of extensive decay in molars and bicuspid can be most perfectly filled with amalgam with the aid of a continuous band matrix, retained in position for several hours after completion of the filling, or until the amalgam has thoroughly set.—C. P. PRUYN, *Dental Century*.

The Copper Matrix.—The copper should be very carefully annealed before it is used. Cooling it in alcohol gives the copper a beautifully clean surface with a lead-like consistency. This matrix enables us to perform operations that absolutely restore normality to tooth and gums.—H. C. REGISTER, *Dental Cosmos*.

SEPARATING METHODS

Cotton an Ideal Separator.—Cotton more nearly approaches the ideal separator, inasmuch as it has more of the advantages and less of the disadvantages of the other materials. Its greatest disadvantage is that it becomes offensive, though this can be overcome by dipping the cotton or swabbing the separator after it is in place with chloro-percha. It takes but a few minutes for the chloroform to evaporate, which leaves a rubber covering which is practically impervious. Increased pressure can be obtained with this method of separating by making a surgeon's knot and placing it between the teeth, then packing in the cotton—as much as the space will admit—then tie at the cutting edge of the tooth. This makes a knot at the cervical margin and at the cutting edge, which forces the cotton into a smaller space, thus increasing the pressure.—J. C. SALVAS, *Dental Brief*.

A Re-enforced Wedge.—This wedge is particularly applicable for cases wherein it becomes necessary to wedge across wide spaces, as in regaining the space of a missing tooth. It consists of the usual piece of cottonwood which has been compressed with the pliers or vise, and carved to the desired size and shape. Through the wedge thus prepared a hole is drilled, and into it is threaded and compressed a large piece of ordinary separating rubber. The principle of it is, that after the wood has expanded to its limit it will relieve the pressure on the rubber, which will attempt to resume its original shape, thus forcing the sides of the wedge further apart.—FREDERICK CROSBY BRUSH, *Dental Brief*.

The "Fish-line" Method of Wedging.—When the teeth are snugly in contact at the masticating surface with a V-shaped space at the gum, pass a piece of doubled waxed floss silk between the teeth, leaving the loop sticking out. Into this loop the fish line (grass line) of the size decided upon is threaded and drawn through. The two ends of the line are then tied with a square knot a little to one side of the masticating surface. Sufficient space for filling may often be gained in twelve hours with but little soreness, but the line will continue swelling for two or three days, when extensive wedging is needed.—S. E. DAVENPORT, *International Dental Journal*.

Obtaining Separation.—To obtain separation for the placing of bands in tooth regulation force over the teeth to be banded unannealed German silver bands made from seamless tubing of gauge 36, allowing them to remain until the following sitting will provide sufficient space painlessly for placing in position annealed bands of the same size fitted over the teeth on the plastic model in the construction of the appliance.—S. H. GUILFORD, *Items of Interest*.

Separation by Means of Gutta-percha.—In obtaining separation through the expansion of gutta-percha in proximal cavities the cavity should be prepared as thoroughly as possible before placing the gutta-percha, as the tooth becomes very sensitive and it is almost impossible to carry on any further operations on account of the hypersensitiveness of the cavity when the gutta-percha is taken out.—DR. WOODBURY, *American Dental Journal*.

The Bonwill Separation for Plus-contour Fillings.—Remove the caries and fill the cavities and intervening space with pink gutta-percha. Dismiss for from three to six months when, through mastication upon the gutta-percha, the teeth will be found somewhat separated, the gum pressed away from the gingival border so that permanent fillings can be inserted under the most favorable conditions.—E. T. DARBY, *Dental Cosmos*.

Separating Tape.—Soak linen tape in thin chloro-percha till it becomes saturated. The chloroform evaporates and leaves a gutta-percha tape, the very toughest and most effective material that has ever been suggested. It does not disintegrate like the plain linen; it remains perfectly in place and does not cause irritation to the soft tissues. Its action, while very effectual, is so gradual that patients seldom or never complain of discomfort.—*Dental Review*.

Separating Rubber.—There is a great tendency in rubber to follow the sloping surfaces of the teeth and insinuate itself into the interproximate space, forcing the gum tissue out and injuring it seriously. The gum should be protected by building a bridge of gutta-percha or cement, extending from the gingival portion of the cavity across the interproximate space, against the next tooth.—C. N. JOHNSON, *Dental Review*.

Separating the Teeth.—When a great deal of separation is needed, partially excavate the cavity and pack very firmly with cotton saturated with chloro-percha. It may remain two or three weeks if needed. The teeth will be well separated, the cavity easy of access, and perfectly protected for the time being by the chloro-percha, while the cotton cannot become foul.—C. O. HOOD, *Dominion Dental Journal*.

Separation for Space in Which to Work.—It is not necessary to have a very large space. Any one who can fill solidly against a matrix can fill equally well against the opposing surface of a proximal cavity, when a thin burnisher passed between will give a good surface to the finish, with no violence done to nature by a wide separation.—THOS. FILLEBROWN, *International Dental Journal*.

Gutta-percha for Separating.—If, when using gutta-percha for separating, the material is softened, it is often difficult to fix it tightly between the teeth. Cut a piece and press it to place cold; then trim into shape with warm burnishers.—R. OTTOLENGUI, *American Dentist*.

Separation with Cotton.—It is important that the space should be thoroughly dry when the cotton is inserted. The action of the cotton is caused by the fibres swelling as they become saturated with moisture, but if they are saturated when put in place there will be little more expansion. If rubber is used the gum should be protected with cotton saturated with benzoin.—R. H. HOFHEINZ, *Dental Cosmos*.

Separation.—Where there is no separation at all and the teeth are very tightly fixed together, silk can be passed through the interproximal space and tied very tight up and over the occlusal; in two or three days two or three strands of silk can be gotten in, and you will soon be able to get quite a separation.—DR. BLACK, *American Dental Journal*.

Separating for Filling.—Using Japanese grass line, put a loop between two teeth, drawing it through at the gum margin with a piece of floss-silk; then tie the two free ends into the loop with two or three knots and leave it for two, three, or four days.—DR. BOGUE, *International Dental Journal*.

The Separator.—A properly-constructed separator should be placed between the teeth during the packing of gold in proximal cavities; it is needed to steady the tooth being filled and assists in giving a clearer view and a freer operating space.—I. L. SWEETNAM, *Dental Register*.

To Prevent Separating Rubber from Injuring the Gums.—Protect the gum tissue in the interproximate space by building a bridge of gutta-percha or cement from the gingival portion of the cavity across to the next tooth.—C. N. JOHNSON, *Den. Review*.

To Get Between the Teeth.—Whether for examination or for cleaning purposes, waxed silk, linen thread, or rubber bands may be made to pass between the teeth readily by first soaping them.—*Dental Office and Laboratory*.

CHAPTER II

TREATMENT AND FILLING TEETH OF YOUNG CHILDREN

Pulp Devitalization in Deciduous Teeth.—It is extremely hazardous, dangerous, and unjustifiable to use arsenic for destroying pulp of deciduous teeth. This is doubtless the cause of the non-eruption of many permanent teeth.—A. W. HARLAN, *Dental Review*.

Nitrate of Silver in Difficult Tooth Eruption.—In the eruption of the temporary teeth, and of the third molar, except when the anatomical conditions indicate surgical interference, painting the red and congested gums with the caustic pencil, or with a pellet of moistened cotton rubbed against the silver nitrate pencil, is of great value through its astringent and antiseptic powers. For the third molars the pellet of cotton may be introduced under the overlying gum and gently passed all around the crown. Two applications are usually sufficient, but may be repeated as indicated.—H. PRINZ, in *Ohio Dental Journal*.

Proximal Cavities in Anterior Deciduous Teeth.—Remove all caries, which is mostly of the brown, leathery character and easily removed. Reconstruct with high-heat gutta-percha after having chloro-perchaed the base of the cavity. This serves a double purpose; it cements the filling to the tooth-walls and insures perfect adaptation of the material used for filling; also reduces the sensibility of the patient to the temperature of the gutta-percha.—LOUIS C. LEROY, *Dental Cosmos*.

Proximal Cavities in the Deciduous Molars.—When the cavities face each other and are too sensitive to permit of obtaining sufficient anchorage for contouring, to prevent the wedging of food between the teeth desperate cases may be bridged across in one solid filling of gutta-percha preceding the filling, by placing a metal guard across the interproximal space, the ends resting on the gingival walls of the opposing cavities. The guard may be cut from thick clasp metal or German silver.—C. N. JOHNSON, *Items of Interest*.

Preservation of Deciduous Molars.—When proximal cavities of decay extend to the gum, and the inflamed gum has encroached upon it, strangle the gum by first cauterizing with carbolic acid and then forcing a pledget of cotton saturated with chloro-percha into the cavity. The chloroform will evaporate, leaving a filling which will permit mastication for a few days, or weeks if necessary, when it can be removed and the cavity treated as indicated.—G. E. ADAMS, *International Dental Journal*.

Treatment of Pulpless Deciduous Teeth.—Open pulp chamber; allay soreness by dressings of old wood creosote; fill pulp chamber half full of cotton moistened and rolled in pulverized nitrate silver; cover with temporary stopping for ten days. Remove the dressing; excavate the crown cavity; syringe carefully with Pasteurine; bathe with creosote; fill cavity with amalgam, making no effort to cleanse or fill the pulp canals.—L. G. NOEL.

Filling Cavities in Deciduous Teeth.—When the timidity or nervousness of the little patient—or extreme sensitiveness of the tooth—prevents thorough preparation, the use of a solution of alcohol, resin, and silver nitrate will prove of great value. Dry the cavity; flood with carbolic acid or oil of cloves, place the above solution on a pellet of asbestos felt, over the soft decay, and fill over this with cement, or, if the cavity will retain it, with gutta-percha.—F. J. WOODWORTH, *Cosmos*.

Treatment of the Permanent Teeth in Young Children.—

When the pulp is nearly or partially exposed carefully excavate all non-sensitive (or literally dead) tissue, and bathe the cavity with 5 per cent. alcoholic solution of hydronaphthol. The alcohol penetrates all soft, moist tissue, carrying with it the healing antiseptic hydronaphthol, which is left in the tissues as the alcohol is drawn off by evaporation. Dry the cavity, and fill with Stowell's hydronaphthol cement, and the sensitive dentin will be recalcified, and the most threatened pulp saved alive, the value of which, in a young subject, cannot be too highly estimated.—S. S. STOWELL, *Dental Cosmos*.

Decay in Deciduous Second Molar.—Cavities upon the distal wall of deciduous second molars require our eternal vigilance, as the erupting first molar has a tendency to crowd into the carious area, reducing the space for the future bicuspid. Give these cavities a retentive form and insert an amalgam filling having an exaggerated and rounded contour. Only as a last resort cut away the decayed surface, leaving a shoulder-like projection at the neck.—D. H. ZIEGLER, *Ohio Dental Journal*.

Filling the Deciduous Teeth.—Cavities in children's teeth should be filled as soon as they appear, in order to prevent pain, to preserve a proper masticating surface, to secure retention of the temporary teeth until the time for their exfoliation, so as to bring about a proper development of the maxillary bones, so that the permanent teeth, when they appear, will have sufficient room to erupt in their proper positions.—F. L. GOLDSMITH, *Dental Record*.

Preserving the Deciduous Teeth.—For the posterior teeth use copper amalgam almost exclusively. It does not disintegrate in the mouths of children, but maintains its integrity indefinitely. It prevents extension or recurrence of decay absolutely, being antiseptic and non-shrinking. It may be placed in close proximity to the pulp, being non-irritating.—J. J. BURKE, *Dental Cosmos*.

Filling Materials for Deciduous Teeth.—For the temporary molars the first material in importance and value is amalgam. Cement is the best preserver of tooth-substance so long as it escapes the wear of mastication and the solvent power of the oral fluids. It closes the tubuli and prevents exudation of fluids about the filling, which, by decomposition, lead to caries about other materials.—A. H. THOMPSON, *Dental Cosmos*.

Filling the Deciduous Teeth.—Gutta-percha not only serves the purpose of saving the teeth, but it also aids in the expansion of the jaws for the reception of the second set. For the permanent teeth, if the teeth are too sensitive or the little patient too refractory or too nervous for extensive operations, pink gutta-percha should be used until conditions make gold possible.—A. OTTOLENGUI, *Items of Interest*.

Hypersensitive Carious Spots in Deciduous Teeth.—Keep the parts to be operated upon as free from moisture as possible. Treat with a strong solution of silver nitrate, 50 per cent., or by deliquescing the crystals in the cavity, absorbing all excess that remains after a half minute or so. If the discoloration is very disfiguring, a shell of very thin platinum may be adjusted with ease and rapidity, and is much less conspicuous.—LOUIS C. LEROY, *Dental Cosmos*.

Temporary Stopping for Deciduous Teeth.—Fletcher's carbolized resin is one of the best preparations for the deciduous teeth. It acts as an anodyne, and will withstand mastication for several days. Mixed with zinc oxid it hardens under moisture, and will last for several weeks.—D. H. ZIEGLER, *Ohio Dental Journal*.

Filling the Deciduous Teeth.—For the anterior deciduous teeth, oxyphosphate of zinc is preëminently the best material, as it can be inserted with a minimum amount of excavating, thereby favoring the little ones all that is possible during their tenderest years.—S. S. STOWELL, *Dental Cosmos*.

Saving the Deciduous Teeth.—Badly decayed, broken-down baby-molars can often be crowned to great advantage, the deciduous teeth being more regular, less crowded, and of shape to receive crowns with but little grinding. In durability this is vastly superior to the best fillings that can be made in these teeth. There is no reason why this method should not prove a blessing to the little ones.—J. R. LOWE, *Western Den. Jour.*

Exposed, Inflamed Pulp in Deciduous Teeth.—It is often impossible to treat with ordinary methods the teeth of young children in which the pulp is exposed and inflamed. Gratifying results follow calling in the family physician to administer a general anæsthetic and thoroughly removing the pulp while the little patient is unconscious.—A. H. PECK, *Dental Review.*

Abscessed Deciduous Teeth.—Force oil of cloves through the sinus, then flood the cavity with a solution of gutta-percha in eucalyptol, and force slightly warmed temporary stopping into each canal until the eucalyptol appears at the opening of the fistula. Fill the cavity, and they will rarely give further trouble.—C. N. JOHNSON.

Amalgam Fillings in Deciduous Teeth.—The pulp of deciduous teeth being very large compared with the size of the tooth, anchorage for amalgam fillings is difficult to secure. This difficulty may be overcome by taking advantage of the adhesiveness of cement. Prepare the amalgam as usual and mix with cement in the mortar.—DR. ROSENTHAL, *Dental Cosmos.*

Sterilizing Partially Disorganized Dentin in Deciduous Teeth.—After securing immunity from invasion of moisture, sterilize with wood creosote, carbolic acid or a eugenol solution of iodoform—preferably the latter. Apply a bit of asbestos paper saturated with the sterilizing solution, and over this an oxysulphate filling.—L. L. DUNBAR, *Pacific Dent. Gazette.*

Broken-down Deciduous Molars.—The pulp should be conserved when possible. If exposed, cap it. It is well to counterirritate the gum over the tooth. When the crown is badly broken down the tooth may still be raised for masticating purposes by crowning, using platinum, which can be rolled thinner than gold and is easily crimped into position.—G. P. MENDELL, *Dental Review*.

Filling the Temporary Teeth: Copper Amalgam.—Copper amalgam, if not abused in its use, makes an excellent filling for temporary teeth, the salts of copper having a stimulating effect on tooth structure and pulp. It is especially valuable for fragile teeth.—H. L. BELCHER, *International Dental Journal*.

Amalgam Fillings in the Deciduous Molars.—In compound cavities, in cases of near proximity to the pulp, or in extra resistive dentin, carbolize the cavity, varnish, fill half full with cement, and follow with amalgam, pressing firmly to displace the cement, except a mere lining.—GARRETT NEWKIRK, *Dental Review*.

Nitrate of Silver for Children's Teeth.—The tooth having been dried as much as possible and the softened decay removed, Dubois, of Paris, applies nitrate of silver in a special gutta-percha prepared as follows: Gutta-percha, 5 parts; zinc oxid, 20 parts; silver nitrate, 2 parts.—HERMANN PRINZ, *Dental Era*.

Deciduous Teeth with Dead Pulp.—Remove all disorganized tissue; sterilize cavity and root-canal with two per cent. pyrozone; treat with oil of cassia or other good antiseptic, and allow period of rest. Fill canals with a paste of iodoform and carbolic acid. Fill cavity as desired.—W. J. TAYLOR, *Pacific Dental Gazette*.

Abscessed Deciduous Teeth.—Clean out the cavity by mechanical means and pack with cotton saturated with oil of cloves; then make pressure by means of unvulcanized rubber, filling the cavity until the oil of cloves comes out of the fistulous opening. Then fill the cavity.—C. N. JOHNSON.

Exposed Pulp in Deciduous Teeth.—It is the easiest thing in the world to get rid of an exposed pulp in a child's tooth. Don't use arsenic, as carbolic acid or oxychlorid of zinc answers the purpose. The latter agent may be left in until absorption takes place.—J. N. CROUSE, *Dental Review*.

Filling Deciduous Teeth.—Hard gutta-percha will render very good service in the anterior teeth if dipped in a solution of rosin in chloroform just before insertion. Absolute dryness is necessary.—C. L. THOMAS, *Pacific Dental Gazette*.

Filling Material for the Deciduous Teeth.—Gutta-percha, into which has been incorporated dry powdered Portland cement, makes a hard filling, which seals the cavity perfectly and stands wear well.—G. J. SIDDELL, *Dental Register*.

Exposed Pulp in Deciduous Teeth.—Exposed pulps in the teeth of children can often be saved by simply covering with a mixture of oxid of zinc and oil of cloves.—DR. WHEELER *International Dental Journal*.

Devitalized Deciduous Molars.—Clean the canals as well as possible, sterilize with carbolic acid, and inject full of liquid paraffin (liquefied in a hypodermic syringe under hot water).—J. W. COWAN, *Dental Cosmos*,

Filling Materials for Children's Teeth.—For the anterior teeth we regard gutta-percha as a *sine qua non*. Even when the cavities are saucer-shaped, by wiping them out with eucalyptus oil and taking a piece of pink gutta-percha the size of the cavity, the solvent action of the oil will cause it to adhere. The application of silver nitrate is often sufficient, without any filling material. The drug neutralizes the decay. If common salt is rubbed over the nitrate of silver it forms a silver chlorid and leaves a polished, though blackened surface.—THEO. F. CHUPEIN, *Dental Cosmos*.

Permanent Fillings in Young Teeth.—While the normal development of dentin has not been completed, the entire external portion of the tooth has been fully formed. Continued development produces changes in amount, not in character. The calcified dentin does not change perceptibly after it is once formed. At a certain period the dentin may be only one-half as thick as it will be later on, but that which is formed is perfectly formed, and as capable of holding a gold filling, or any other filling, as it will ever be.—F. B. NOYES, *Dental Cosmos*.

Proximal Cavities in Young Front Teeth.—Gutta-percha, if of good quality and not overheated, will, when carefully introduced and well protected by the enamel margins, sometimes last ten years in proximal cavities in the front teeth, and as it has, of all the materials yet employed, the least power of conducting heat and electric currents, it is perhaps the best agent we have for proximal cavities in the incisors and cuspids of very young patients.—L. G. NOEL, *Dental Digest*.

Filling Materials for Children's Teeth.—While the cements are frequently not as durable as we might wish, that is more than outweighed by the saving of tooth structure, vital energy, and temper of the patient. It is possible to do greater good with less suffering, to accomplish more with less wear and tear to both patient and operator, with the cements than with any other material in a wide range of cases.—CHAS. A. VAN DUZEE, *Dental Summary*.

Permanent Fillings in Young Teeth.—The pulps in young teeth have much more vitality before their function is completed than they have later, and consequently will tolerate metal fillings which are separated from them by only a thin layer of dentin better than they will after the normal formation of dentin is completed, the new formation rapidly interposes a non-conductor of natural origin.—F. B. NOYES, *Dental Cosmos*.

Filling Children's Teeth.—For children's teeth or other wholly or partially submarine work, the following is recommended: No. 10 gold and No. 10 tin, equal parts, folded and cut in strips. No amalgam will work easier, and no filling, of any material whatsoever, will approach it as a tooth saver under like conditions.—J. R. CALLAHAN, *Dental Review*.

Fillings in Children's Teeth.—In children's teeth never place amalgam in proximal cavities in bicuspid, but use instead oxyphosphate or gutta-percha, according to conditions. This prevents any possible staining of the tooth-structure, and will save the tooth, so that in the future you will be able to place a suitable and enduring permanent filling.—H. S. SUTPHEN, *Items of Interest*.

Pink Gutta-percha for Children's Teeth.—Pink gutta-percha is considered the most reliable of all materials for temporary fillings; first, because it excludes caries, and, second, because of its temporary character, which causes the early return of the patient for the final operation with gold.—R. OTTOLENGUI.

Operating for Children.—Every kind word and act, every lost moment, and every self-sacrifice, if judiciously expended, in our dealings with our child patients will surely return to us like bread cast upon the waters, and will insure everything that is desirable in the later years of practice.—CHAS. A. VAN DUZEE, *Dental Surgery*.

Proximal Cavities in Young Teeth.—In proximal cavities infringing upon the gums, two cavities in the same interproximal space. Fill with gutta-percha and span across with a piece of metal to prevent the gutta-percha from infringing on the gums.—DR. WENKER, *Dental Summary*.

Gold Fillings in Children's Teeth.—If I can secure the proper conditions in the mouth, and if I can so control the patient that I can secure a perfect mechanical operation with gold without jeopardizing the nervous condition of the child, or creating a dread of dental operations, I will put in gold every time.—G. V. BLACK, *Dental Review*.

Deep Cavities in the Permanent Teeth of Young Children.—Excavate conservatively, removing all the non-sensitive tissue, with the assurance that if properly aided nature will recalcify all softened dentin when sensitive living fibre remains. As these fibres were the original tooth-forming organs, so they are still able to rebuild the broken-down dentin under favorable conditions.—S. S. STOWELL, *Dental Cosmos*.

Sensitive Cavities in Children's Teeth.—Some of the softened dentin is first excavated and then a mixture of equal proportions of Fletcher's dentin and nitrate of silver is placed in the cavity, which has been previously dried. At the next visit it is quite easy to excavate the cavity.—H. W. N., *Dental Record*.

The "Arthur Method."—When caries appears on the proximal surface of the six anterior teeth soon after their eruption, the practice of cutting away the proximo-lingual surface is very beneficial. I do not call to mind a single case where decay has recurred after this treatment, even in the most extreme cases.—J. N. CROUSE.

Care of Children's Teeth.—For the health of the individual, for the comfort of the family, for the welfare of the State, treat the children's teeth early and imbue them with the belief that *clean teeth do not decay*.—GEO. CUNNINGHAM, *British Dental Journal*.

Laneing the Gums.—To be of service to the erupting tooth or teeth the incision should be deep and made through that part of the tissue where the greatest tension is observed. The point of the bistoury should be reintroduced and semi-circular sweeps made to free the presenting part of the tooth from the integument.—WM. J. MANNING, *Dental Digest*.

Filling Large Cavities in Undeveloped Teeth.—Paraffin is well tolerated by the soft tissues. Dr. Traumer, of my city, has used paraffin in filling large cavities in teeth with open foramen, and he has had good success.—HANS PIEHLER, *International Dental Journal*.

CHAPTER III

PORCELAIN INLAYS—GOLD INLAYS

Practical Points in Inlay Work.—For low-fusing body proceed as follows: Apply the dam to give a clear working space; use rolled gold No. 30 unannealed for the matrix. In getting the impression use wet cotton pellets for packing instead of chamois discs, as the cotton will, when wet, remain where it is placed, thus overcoming the tendency to slip when the matrix is being burnished to the cavity edge. Remove the matrix by means of the chip blower. After the inlay is baked, cover the outer surface with a thick coating of paraffin, letting it run down on the gold as well. When cold peel the gold from the paraffin and inlay with the pliers and cover the exposed surface of the inlay with hydrofluoric acid. Let stand until the acid has exhausted its strength. Hold the paraffin in cold water and chip it from the inlay, leaving it ready for inspection.—R. B. GENTLE, *Dental Brief*.

Porcelain Inlays—The Matrix.—To obtain a model of tooth and cavity from which to make the matrix either wet the cavity or oil it, and then take an impression with red impression material. Take it out and oil it thoroughly, and then work around the little protuberance the oxyphosphate of zinc in proper consistence, letting it harden, and you have an exact duplicate of the natural tooth in oxyphosphate. Into the little cavity, which is quite clearly defined, you can burnish your matrix of platinum, and do your baking without trying it in the mouth at all.—S. G. PERRY, *Dental Cosmos*.

Natural Tooth Enamel for Inlays.—Advantages: (1) the natural color assumed in from three days to two weeks after the operation; (2) the natural contour of the tooth restored; (3) strength, non-friability; (4) the artistic value when perfectly done. Cut the inlay from a tooth of same size and shape as the one to be operated on. Give it a bath of iodine to cleanse it; place in a solution of bichlorid of mercury, 1-2000, for twelve hours. Grind to proximately the size required. Mount with shellac to an instrument so as to give access to cavity. Smear the cavity with rouge and oil, press the inlay in, and grind to fit. Wash out cavity with soap and warm water to remove oil. Dry thoroughly, and set inlay with best cement.—A. H. WALLACE, *Pacific Stom. Gazette*.

Treatment of Plaster Cast, for Porcelain Inlay Work.—Take impression in modeling compound and make a small cast. Dry the cast and immerse in melted stearin, allowing to remain about a minute and a half. As soon as withdrawn blow vigorously upon that part representing the cavity, to prevent the stearin from settling in the cavity. It will cool in a few minutes and will be of sufficient hardness to permit burnishing a platinum matrix without breaking the margins of the cavity.—W. D. TRACY, *Dental Cosmos*.

Indications for Inlay Work.—The undue tax on the patient in the insertion of large gold fillings, particularly in molars and bicuspid, is an indication for inlay work. It is here that they may be made to answer the most useful service, saving the patient from the tedium of protracted filling operations. This method closes the gap between filling and crowning, the best interests of the patient being secured by deferring crown-work as long as possible.—C. N. JOHNSON.

Matrix for Inlay Work.—Prepare the cavity so that an impression will readily draw. Take an impression in modeling compound and outline the matrix over it, having

ample margins. With cotton pellets and burnishers thoroughly form the matrix to cavity; then remove the cotton and having slightly oiled the modeling compound impression force it into the cavity over the matrix and firmly swage it with the fingers or suitable appliances. Remove the impression and matrix together and invert in three parts powdered inlay to one of plaster, mixed with water.—F. S. MORRISON, *Dental Summary*.

The Gold Inlay.—The inlay offers greater immunity to recurrent caries by virtue of its sealed, cemented joint between filling and cavity wall. In the plugger-made filling, no matter how skilled and conscientious the operator, how perfectly the cavity formed, how far extension for prevention is carried, how well the gold is condensed and adapted, what time and labor are spent, there is always a filling without adhesion, an open joint between gold and tooth structure, a space between cavity wall and filling, which is a constant menace.—I. W. WASSALL, *Items of Interest*.

Gold Filling versus Porcelain Inlay.—With restorations done in porcelain we have something that adheres to the walls of the cavity and braces up where gold does not lend much of its strength. Frail corners will not break away from cement, where they would from gold crowded up against them, so that it is possible to conserve more tooth-structure in using inlay, for there is union of inlay, cement and tooth.—R. B. TULLER, *American Dental Journal*.

Repairing Chipped Inlays.—In molars or bicuspid, where a slight line of metal will not be objectionable, a chipped margin is easily repaired as follows: Cut out the edge with a fine fissure bur; wash with alcohol and dry; place a small quantity of oxyphosphate of zinc in the fissure and squeeze it out with pieces of sponge gold. Let the cement harden, cleanse the margins, condense the sponge gold, and finish in the usual way. Amalgam instead of sponge gold may be used in the same way.—JOS. HEAD, *Dental Summary*.

Inlays: Fitting Matrix to Cast.—My method is to take an impression in modeling compound, filling in that part where the inlay is to be made with enough oxyphosphate to fill a little more than the cavity impression. Then pour plaster in the rest of the impression and the result is a plaster cast with that of the tooth in much harder substance. The cast of the tooth can be removed from the main model, which is a great convenience, especially in proximal cavities.—C. W. F. HOLBROOK, *Items of Interest*.

Backing Porcelain-faced Crowns.—Having ground the tooth at the back to the desired shape, dust it with French chalk and press it firmly with Mellotte's moldine. Draw away the tooth and insert in the pin holes pieces of steel, iron or copper wire about the same gauge as the platinum tooth pins; pour the fusible metal, draw away the die; dust with French chalk and take counter die. You can then strike up the backing without fear of breaking the tooth.—W. B. R., *Elliott's Quarterly*.

Porcelain Inlays.—Prepare cavity as for gold, fill undercuts with wax to facilitate removal of matrix. Form matrix of 60 or 80 gold foil, first pressed into the cavity with firm wad of cotton and then burnished in. I use Meyer's prepared glass powder, which flows to the surface of the gold as though it were solder, and makes a hard filling which has a surface like that of an English tooth.—A. V. ELLIOT, *Florence, Italy*.

Bubbles in Porcelain.—The reason why we have so many bubbles in porcelain bridge-work is on account of using too large quantities of porcelain at one time over a rigid framework. The first bake should never cover the pins, or even touch them; if it does, on shrinking it leaves an air space beneath, which later means a bubble. Apply and bake several times, until the framework is covered, bringing to a low glaze each time, and you will have porcelain free from bubbles.—A. W. STARBUCK, *Western Dental Journal*.

Adaptation of Inlay-matrix in Very Deep Cavities.—The stability of an inlay is much enhanced by the depth to which it may be introduced into the cavity. To avoid tearing the foil, Dr. Emil Schreier suggests the use of what is known as goldbeater's skin. This is to be placed on the underside of the foil, and therefore next to the cavity walls. With ordinary care the gold can thus be forced to a very considerable depth without tearing. The goldbeater's skin acts as a cradle to support the matrix while it is being carried to place.—R. OTTOLENGUI, *Items of Interest*.

Inlays: the Gold Matrix.—It has been suggested that the matrix be formed of No. 36 gold plate, and that the portion which comes in contact with the margins, and for a considerable distance below, be left upon the inlay. After the cement is thoroughly hardened the surplus gold that overhangs the margins is to be cut off and the remaining gold burnished to cover up the line of cement. The advantages are that the gold is so heavy that it will not pull in fusing the porcelain, and it makes a more perfect union between the inlay and the tooth.—F. T. VAN WOERT, *Dental Cosmos*.

Vulcanite Inlays.—For occlusal surfaces inlays of gray or white vulcanizable rubber are readily made at but little cost, the appearance of the finished work being excellent. The cavity is prepared without undercuts, swabbed with vaselin, and an impression taken with moldable wax. White or gray rubber is packed into the plaster mold and the case vulcanized. Finish up well, polish and cement to place. Gold or platinum foil may be used as a matrix, thus insuring a perfect fit.—*Translated for Dental Digest*, by B. J. CIGRAND.

Bruhn's Impression Dies for Inlay Work.—Select from the outfit a die of approximate size and shape and form the matrix by pressing the die upon the foil on a rubber pad; then burnish into the cavity in the usual way. The possi-

bility of tearing the matrix is reduced to a minimum while the foil, being partially swaged by the stamp, stays in position better on first insertion, and the annoyance of finding the impression too short at the cervical edge is entirely done away with.—*Dental Record*.

Inlays: Fusing the Porcelain.—Have a little square platinum pan which can be handled from any of its four corners, the bottom of which is perforated. By placing this pan on a piece of lead and driving a broken excavator through it with a small hammer, forming a burr or projection around each hole, so that when the asbestos paste is put in it, and the matrix adjusted to position, it can be placed upon the hottest furnace without danger of blowing out the investment by the formation of steam.—F. T. VAN WOERT, *Dental Cosmos*.

Treatment of Minute Cracks in Porcelain Facings.—Minute cracks, sufficient to ruin the artistic effect, yet not enough to materially weaken the crown, may be effaced by drying the crown thoroughly with alcohol; then dropping it in liquid albolene, allowing it to remain about five minutes. Remove, wash with soap and water, dry with alcohol, and the crack will not be perceptible. Under the moist conditions of the mouth the albolene which has penetrated the crevice will never be evaporated.—J. E. HYMAN, *Dental Digest*.

Gold Inlays: the Matrix.—For the matrix pure gold, at least No. 36, Brown and Sharpe's gauge, is preferred. Cut a piece large enough to line the cavity with plenty to extend beyond the margins in all directions; place this over the cavity, and with a good-sized piece of spunk push the gold to the bottom and hold it in place by pressing on the spunk with a broad-faced instrument, while with a burnisher the gold is worked against the margins and any wrinkles worked out. Remove, anneal, return to cavity, and burnish until perfectly fitted to cavity.—E. H. ALLEN, *Dental Digest*.

Taking Impression of Cavity for Inlay Work.—If the edges of the cavity be dusted with soapstone, and soapstone be mixed in the cement, when the material is placed in the cavity it will become exceedingly hard, and, being so loaded with soapstone, it comes out readily, so that it forms a hard, dense impression, the exact size, shape, and form of the cavity, which can be invested, and on which platinum can be swaged.—GEORGE H. WILSON, *Dental Cosmos*.

The Porcelain Jacket-crown.—For a porcelain jacket-crown the tooth should be trimmed to a taper, with a well-defined shoulder at the gingivo-labial cervix only, one-fortieth of an inch beyond the gum's free margin. The trimming can be made painless by the use of dentinal-tubuli pressure anæsthesia. Before placing the crown cauterize the stump with silver nitrate. The crown should be set with gutta-percha, thus protecting and preserving the pulp.—J. J. SARRAZUI, *The Dentists' Magazine*.

Swaged Matrix for Porcelain Inlay.—With special swaging device the matrix of 35- or 36-gauge pure gold is swaged upon a cavity impression taken with archite. After the first swaging the gold is separated from the impression, annealed thoroughly, and reswaged with the addition of sufficient non-fibre gold to fill all torn places and make a heavy matrix which will not warp. Pack with low-fusing body and bake in the flame of a Bunsen burner.—ALEXANDER JAMESON, *Dental Summary*.

Alcohol in Porcelain Work.—The best liquid to use for moistening porcelain bodies is alcohol. From its rapid evaporation it does not form steam as is the case with water. It can be burned out of the body by holding it close to a flame, without dislodging the porcelain body. Denser pieces are secured, and more correct shade, because of fewer bubbles. Where there are bubbles in the porcelain the shade is thrown off more or less.—I. L. HELMER, *Items of Interest*.

- **The Platinum Matrix.**—Commercial platinum is supposed to be 1-2000 of an inch in thickness. Anneal, oil and fold this together and with a good set of rolls reduce it to about one-half its thickness. Platinum so prepared is glazed on the surface which comes in contact with the steel roller, while the other side has a frosty or velvety surface. Put the frosted surface in contact with the tooth, the glazed side in contact with the porcelain, as it strips off more easily.—*Western Dental Journal*.

The Inlay Matrix.—A heavy matrix should not be burnished to the cavity, for as the outside of the matrix represents the inside of the cavity the inlay will in the thickness of the matrix be too small for the cavity. In such cases the matrix should be swaged to a sharp and perfect impression of the cavity, and the inside of the matrix will then represent the inside of the cavity, and the inlay with matrix pulled off will fit the cavity perfectly.—R. N. LECRON, *Dental Record*.

The Gold Inlay.—For the repair of bicusps and molars in which there has been serious loss of tissue, but in which the *dernier ressort* of crowning is not yet called for, the gold inlay has been extremely satisfactory, serving as an intermediary operation between the small, easily made gold filling and the badly broken crown demanding excision. It avoids the effects of the band beneath the gingivæ, and can be constructed and cemented to place without the application of the dam, so commending it especially for cavities extending far beneath the gum line.—W. V.-B. AMES.

A Gold Inlay.—After placing matrix of gold roughly, pack it full of moss-fibre gold, and, removing the mass, flow solder over the gold. Then replace the inlay, readapt to the margins with burnishers, and flow on solder to proper contour. With due care investment is unnecessary.—W. O. FILLMAN, *Northwestern Dental Journal*.

The Use of Chamois Leather in Taking Impressions for Inlays.—The method of using is to fill the impression in the ordinary way with amadon; then remove the amadon and fill with small pieces of chamois, using pressure in the same way as with the amadon. It seems to produce a sharper outline and permits of the foil being carried over the edges with less danger of tearing.—THOMPSON MADIN, *Journal British Dental Association*.

Gold Inlays: The Matrix.—Matrices should always be thickened with 22-karat solder, as thickening stiffens the matrix and prevents change of form during removal from the mouth. Care should be taken to prevent the solder from running over the margins. Cavity margins should be carefully polished before attempting to make a matrix, as the gold is liable to be torn if any sharp corners are left.—THOS. P. HINMAN, *Items of Interest*.

A Point in Inlay Work.—To overcome the tendency of Jenkins bodies to globulate in fusing in the electric furnace, make an extra muffle of thirty-gauge platinum plate, bent into the form of an inverted letter U or half circle, which nicely covers the inlay and most of the tray, thus causing it to heat through more evenly. Fuse to perfect glaze the last time only.—W. H. STREETER, Boston, Mass.

Gum Camphor in Matrices.—Results are not always satisfactory in the use of gum camphor to facilitate the removal of inlay matrices without bending. This is frequently due to the fact that American refined gum camphor is used instead of the Japanese refined, which is far less friable and works particularly well when slightly warmed and packed into place with warmed instruments.—L. A. JENKINS, *Items of Interest*.

• **The Matrix in Porcelain Inlay Work.**—Gum camphor combined with paraffin seems to make the best material for packing the matrix before removing it from the cavity. Use the paraffin first, following it with pieces of gum camphor

crowded in upon it. The paraffin is more adhesive, while the camphor gives stability. Both can be burned away without leaving any perceptible residuum.—E. HOWARD BABCOCK, *Dental Cosmos*.

Porcelain Inlay vs. Gold Filling.—An *average* porcelain inlay, set with good cement, under favorable conditions, is far superior to any *average* gold filling, for the reason that an average filling is not a good filling. An average filling generally stays in a while and may or may not check decay, and sooner or later has to be done over. The average inlay stays in well and preserves the tooth and does not offend the æsthetic eye.—R. B. TULLER, *American Dental Journal*.

Porcelain Inlays: Adhesion.—It has been demonstrated time and again that cement will not adhere to a glazed surface as well as to an etched surface. In all cases where an inlay has dropped out of a cavity you will find that the cement adhered to the surface of the tooth, and not to the inlay itself. Do not attempt to groove inlays on account of the danger of serious damage, and it is not necessary.—J. E. NYMAN, *Dental Summary*.

Three Mistakes in Taking Cavity Impressions.—*First*, having the piece of foil so large as to overlap the cavity; *second*, endeavoring to make exact impression of bottom of cavity, which is undesirable because space is needed for cement; *third*, the use of ball burnishers to burnish foil against walls of cavity; use chamois skin and sponge to press the foil to place.—ALFR. KASBITZ, *International Dental Journal*.

Setting Inlays; Washing out of Cement.—Extended observation seems to indicate that we have little to fear from this, particularly with gold inlays and a high-grade quality of cement. It would seem impossible to doubt that when due care has been exercised in the adaptation of the inlay, and a good grade of cement used, little fear need be had as to any serious washing out of the cement.—C. N. JOHNSON.

The Matrix for Porcelain Inlay.—Platinum is preferable to gold for making the matrix. Burnishing to the cavity walls makes it stiff and springy so that it can be removed without distortion. It is tougher than gold, and quite as ductile, and is capable of standing any temperature desired, a vital point, as high fusing bodies are stronger and more easily contoured than those which melt at 2,000 degrees or under. Their shades also vary less in the burnishing.—JOSEPH HEAD, *Dental Cosmos*.

Dislodging Matrix from Cavity.—Fill the matrix with yellow beeswax, pressing it in with the ball of the finger; when the finger is removed the matrix will be found clinging tightly to the wax and the wax to the finger. Remove the wax from the matrix by dipping it in boiling water or holding it for a minute in the flame. Great care must be taken to have the matrix left perfectly clean, as any wax remaining will discolor the porcelain.—T. P. HINMAN, *Dental Headlight*.

Contour Porcelain Inlays.—Contour in porcelain inlays is made by fusing sufficient body in the deeper portion of the matrix to give a flat surface. A core of high-fusing porcelain of suitable size and color is set in place and tacked with a little fluid body. When fused, the core does not move, and the filling is rapidly completed by covering core with porcelain of the color indicated. Any desired contours can be obtained with ease and certainty.—W. FRANCIS MELLERISH, *British Dental Journal*.

Box-inlays.—(1) Prepare cavity with clean-cut margins and fill all undercuts, so that impression can be easily withdrawn. (2) Burnish under shell into the cavity, and fill or contour with wax, in the mouth. Strike up the outer shell; place the two together with bits of solder around the margins. Heat in Bunsen flame till solder flows; trim edges and polish. (3) File through the under shell and fill with cement, with excess on under surface, and press to place.—GEO. S. ALLAN, *International Dental Journal*.

Gold Inlay.—In the method demonstrated by W. Francis Mellersh before the British Dental Association, the cavity was prepared without undercuts and the walls made parallel; an impression was taken and a cast made; the resulting model was lined with thin platinum and the cavity filled with pure gold fused under the blow pipe. The plug was then trimmed, undercut and cemented to place, the edges being sealed with sponge gold welded on with hand-pressure instruments.—*Dental Record*.

Supporting Matrices, Etc., While in the Furnace.—Broken clay-pipe bowls make good trays for support of matrices and their contents, facings that are being backed with porcelain, whole crowns, etc., during the baking process. For very small inlays, fragments of the stem are ideal. For crowns with pin, the hole through the stem supplies the means of keeping the work upright.—*Office and Laboratory*.

A Place for the Porcelain Inlay.—Use the inlay in the first half or two-thirds of a proximal cavity, never bringing it to the grinding surface, anchoring it with cement and then filling the remainder of the cavity with gold, burnishing it over the inlay, leaving the foil filling as the masticating surface of the tooth. These operations are admirable, especially when the walls are frail, as the cement strengthens the wall, while burnishing up the wall from without holds the inlay admirably; the foil filling for the surface being less easily displaced than the inlay, is very satisfactory.—C. S. BUTLER, *Dental Cosmos*.

Especial Value of the Inlay.—The most valuable aid that the inlay has given to dentistry has been its tending to do away with much of the radical crowning of teeth, enabling us to save more of the vital part of the tooth, namely, the root itself, which is the mainstay of the tooth, whether it contains a pulp or not.—M. L. RHEIN, *Dental Cosmos*.

Inlay Work.—Make the walls of the inlay slightly tapering, and remove with sandpaper disk the gloss from the parts of the inlay that fit into the cavity. You will then have, when cemented, an inlay flush with the surface of the tooth without grinding it, the cement occupying the space which was filled with that which you removed with the sandpaper disk.—E. M. FERNANDEZ, *Dental Review*.

Setting Inlays.—When the cavity extends below the gum margin, it is best to place a piece of cotton saturated with adrenalin well down between the teeth and against the gums, allowing it to remain several minutes. This not only prevents the gums from bleeding or marking but causes the tissues to shrink temporarily.—THOS. P. HINMAN, *Items of Interest*.

Advantages of Porcelain.—In the porcelain inlay we are using the best tooth preserver at our command. We are using a material that will protect the enamel from fracture, the dentin from decay and the pulp from irritation. It is compatible with tooth structure, durable, a non-conductor of thermal changes, no electro-chemical action on dentin, and artistic in effect.—J. ALLEN SMITH, *Items of Interest*.

Etching Porcelain Inlays.—Hydrofluoric acid makes a smooth etch; *white acid* makes a frosted etch, to which the cement will tightly adhere. It is prepared by making a saturated solution of ammonium carbonate in hydrofluoric acid, using a lead dish; evaporate to one-half its bulk; add hydrofluoric acid up to original bulk, and evaporate again to one-half. Keep it in a gutta-percha bottle.—JOSEPH HEAD, *Dental Cosmos*.

To Etch the Surface of a Gold Inlay.—When the inlay is ready to set, coat the surface you want cement to adhere to with mercury, spreading the mercury around with the aid of a pellet of moist cotton and a pair of pliers. Then hold over an alcohol flame and slowly drive off the mercury, leaving a rough crystalline surface, to which cement will adhere.—C. J. HADLEY, *Dental Review*.

Setting an Inlay.—See that the cement covers every wall, is in the seat and over the margins. Insert the inlay, and with tape between the teeth force the inlay to place with a drawing motion that will press it into the resistance seat and hold it for ten minutes. The tape gives equal pressure on all parts of the inlay and wipes the joints free of excess cement, allowing the cement to harden with the natural gloss to protect it. When the tape is removed varnish the joints. Architect's cloth, which is thin and strong, can be used in place of tape.—G. F. WOODBURY, *Dental Summary*.

Matrix for Porcelain Inlay.—Use gold for matrices; pack the matrix full of cotton (tight), and then drop melted wax on the cotton and pull it out with a hooked instrument. Invest in asbestos and burn out the wax and cotton; the little ash that will be left you can blow out with a puff of the breath, with nothing left to cause trouble.—DR. BARKER, *Items of Interest*.

Etching an Inlay.—If, after treatment with hydrofluoric acid, the inlay is immersed in alcohol, the etching seems to be increased, and after the resultant powder has been removed, using a small mandrel brush in the hand-piece under moderate speed, a surface is obtained to which cement adheres very strongly.—DR. NYMAN, *Dental Cosmos*.

The Porcelain Crown.—Use 25 per cent. platinum solder when attaching the floor to the band and the dowel to the floor, especially is using a high-fusing body. If the dowel can be raised up a little above the floor it is stronger as regards the possibility of the crown tipping on the dowel.—F. H. BERRY, *Dental Review*.

The Gold Matrix: Protection from Fusing.—It is not necessary that any matrix be invested; when gold is used it is protected from fusing by coating it, preferably with rouge because of its great fineness and affinity for a smooth surface. The rouge is bought in powder and spatulated with alcohol and water.—W. A. CAPON, *Items of Interest*.

A Handy Appliance for Electric Furnace Work.—Get a clay pipe, just the common penny kind, and cut the stem in pieces about half an inch long. In making a crown set the post in the hole in the piece of stem. The pieces will stand the highest heat required in every case.—G. B. SPEER, *Dental Brief*.

Undercuts in Porcelain Inlays.—Solder to an old bur a piece of copper plate, and turn down to about three-sixteenths of an inch in diameter. Moisten this with a mixture of carborundum powder and glycerin. With this undercuts may be made in the inlay, shaping it similar to a collar-button, avoiding all acute angles.—R. M. HILL, *British Dental Journal*.

Large Porcelain Fillings: the Matrix.—Very large porcelain fillings in bicuspid or molars are more difficult to make because of the distortion of the matrix. As the esthetic is largely eliminated from these fillings it has been suggested that the matrix be formed of No. 36 gold plate, and that the portion which comes in contact with the margins and below be left upon the inlay. After the cement is thoroughly hardened the surplus gold that overhangs the edges is to be cut off and the remaining gold burnished so as to cover up the line of cement.—F. T. VAN WOERT, *Dental Cosmos*.

Soldering with the Electric Furnace.—A nice way to solder a Richmond crown or a small bridge is to use a miniature furnace; this puts the blaze on the under side of the investment, thus causing the solder to flow nicely around the facings.—F. B. WIESNER, D.D.S.

The Porcelain Inlay.—It is possible to consume more tooth structure in using the inlay, than with the gold filling for there is union of inlay, cement, and tooth. The inlay braces up whereas gold does not lend strength, perhaps really weakens. Frail corners will not break away from cement as they would from gold malleted against them.—R. B. TULLER, *American Dental Journal*.

Retention of Corner Inlays.—To retain a small corner or an incisor it is sometimes advisable to form a groove at the base of the cavity, pushing a staple of platinum wire through the bottom of the matrix, held in position with a little dampened body, the whole withdrawn from the cavity and baked. If something of this kind is not done the corner is liable to become dislodged from a very slight strain.—F. J. CAPON, *Dental Cosmos*.

Porcelain Inlays: the Three Essentials.—Deep cavity. Good margins. Thorough adaptation of matrix to interior as well as margins of cavity.

First of all is a good, deep seat for the filling. The margins should be as thick as possible and should not be bevelled externally. Strip the matrix from the margins to the centre, taking great care not to injure the margins.—B. BRIDGE-FORTH, *Dental Summary*.

The Under-surface of Porcelain Inlays.—If an inlay is embedded face down in base-wax and the exposed portion covered with hydrofluoric acid for five or ten minutes, the etched surface will add greatly to the strength of the setting because of the strong adhesion of cement to such a surface.—F. T. VAN WOERT.

Adjusting an Inlay.—Before adjusting an inlay the cavity should be dried and wiped with cement liquid. The inlay should be treated in the same way and the surplus liquid wiped off. This will produce a stronger adhesion when the inlay is cemented.—W. H. UPJOHN, *Dental Summary*.

Porcelain Inlays: Preparation of Cavity.—In the preparation of the cavity all inside angles and corners should be slightly rounded to make it easier of access to get a more accurate matrix. It is extremely difficult to obtain one from a cavity full of sharp right angles.—W. H. UPJOHN, *Dental Summary*.

Annealing Matrix Metals.—This is best accomplished by grasping the small piece of metal at one corner with a pair of old plugging pliers and holding it in a Bunsen or alcoholic flame until it nears the melting point, then plunge into cold water. This gives a very soft pliable matrix metal.—THOS. P. HINMAN, *Items of Interest*.

The Inlay Matrix.—For large fillings in molars and bicuspsids a valuable method consists in forming the matrix of heavy gold, say 36 heavy plate pure gold, having it on the inlay when inserted; after finishing it down it leaves a thin line of gold which can be burnished, and practically covers the cement line.—F. T. VAN WOERT, *Items of Interest*.

Adherence of Porcelain Inlays.—Hydrofluoric acid will remove the glaze and leave a roughened surface that cement will adhere to. Do not try to neutralize the acid, but remove mechanically with water and a stiff brush the fine powder resulting from the action of the acid.—W. T. REEVES, *Dental Summary*.

Setting Porcelain Inlays.—When set with cement, a trace of the liquid, without powder, should be placed in this surface. This will give an adhesion which is of great advantage.—B. HOLLY SMITH, *International Dental Journal*.

Plaster Impressions for Inlay Work.—If you will mix your plaster first with kaolin, about equal parts by weight, which will give you more plaster than kaolin, and then use rice gluten instead of water in mixing, it will not shrink or lose its weight and you will have an intensely smooth surface. The inlays will come away very clean.—D. GENESE, *Dental Cosmos*.

The Porcelain Inlay.—The fact that porcelain has a greater range of application, is more permanent, more compatible, harmonizes in color better, is more sanitary, and requires less physical exertion upon the part of both patient and operator than any other material, will force its universal adoption in time.—F. E. ROACH, *Dental Digest*.

The Gold Inlay; Protecting the Cement Joint.—Protecting the cement joint by beveling fully and carrying the gold over the bevel is the vital principle of the gold inlay. The impracticability of extending porcelain in the edges is often against the use of the porcelain inlay.—W. V. B. AMES, *Dental Cosmos*.

Gold versus Porcelain Inlay.—The gold inlay, save color, possesses all the virtues of porcelain and many peculiar to itself, and as the conditions demanding a gold inlay in the anterior teeth are usually found in men of middle age, the objection to color is insignificant. —J. D. WHITE-MAN, *Dental Summary*.

Removal of Trays from Muffle.—Coarse sillex sprinkled over the floor of the muffle will prevent adhesion of trays, whether of clay or platinum. No attempt should be made at any time to remove the sillex; most of it becomes a fixture and serves a good purpose.—*Dental Office and Laboratory*.

Fusing the Jenkins Porcelain Body.—It would be possible for one to use the ordinary gas furnace, * * * or one need not have a furnace. You can take some of Teague's Compound, make a little muffle, place it over charcoal, and apply a blow-pipe flame to the bottom of the muffle.—DR. DEEMS, *International Dental Journal*.

Retention Groove for Matrices.—Use thin copper plate for inlay matrix. Place a fold of small copper wire in bottom of matrix and run up with gold solder, using plenty of flux. Just before setting drop the inlay into nitric acid to remove the copper. The removal of the copper wire leaves a good retaining groove.—J. B. NEWELL, *Dental Review*.

Investment for Inlay Work.—A bottle of powdered asbestos and water, of creamy consistency, can be kept in the cabinet, near the chair, ready for use at any moment, and will be found much cleaner and neater to handle than mixing for each case.—F. T. VAN WOERT, *Dental Summary*.

Porcelain Inlays, Cutting the Grooves.—When Dr. Jenkins cuts his grooves he endeavored, if possible, to get a filling that would be in the shape of a collar-button, the groove being cut around the circumference of the filling, and in antagonism to the undercuts in the tooth.—R. OTTOLENGUI, *Items of Interest*.

Setting a Porcelain Inlay.—When ready to set the inlay, roughen the cavity, and grind the under side of the inlay with a three-sixteenths inch fissure diamond disc, so as to engage the cement. The inlay should be kept wet while grinding to prevent darkening.—A. E. PECK, *Dental Summary*.

The Gold Inlay.—The gold inlay has one marked advantage over the porcelain, in that the matrix becomes a part of the inlay, giving it an exact fit to the cavity, therefore requiring the minimum of cement.—JOSEPH W. WASSALL, *Items of Interest*.

Inlays.—Cavities filled with inlays, owing to the adhesive setting of cement, are less liable to suffer fracture, and for that reason are practical in teeth of poor structure, something not particularly true of anchored fillings.—C. N. THOMPSON, *American Dental Journal*.

Gutta-percha in Setting Inlays.—Wherever an inlay can be placed in a tooth, the pulp of which has been destroyed—and it is possible to get a pin to go into the root—use gutta-percha always.—F. N. BROWN, *Dental Cosmos*.

Porcelain Inlays in Proximal Surfaces in Front Teeth.—It is an easy matter, after the cavity is prepared, to fill with oxyphosphate, using the porcelain only as a thin veneer. Then the teeth need not be wedged so far apart, and scarcely any undercut is required.—S. G. PERRY, *Dental Cosmos*.

Inlays: The Cavity Margins.—The ordinary round bur leaves a sufficiently smooth margin for all purposes and has the advantage of holding the cement better than a highly-polished surface.—EDW. EGGLESTON, *Dental Summary*.

Setting an Inlay.—Don't set an inlay without putting on the rubber dam, and don't remove the excess of cement before removing the dam. After the saliva has bathed the tooth the cement will come off easily without danger of dislodging the inlay.—W. T. REEVES, *Dental Summary*.

Impression for Inlay Work.—A piece of dental lac, warmed and pressed into the cavity and cooled with a jet of water before removing, will give a rigid and perfect impression, more quickly taken than with gutta-percha.—PERCY ST. C. SMITH, *Dental Review*.

The Gold Inlay.—The gold inlay offers greater immunity to recurrent caries by virtue of its sealed cemented joint between filling and cavity wall. The space between cavity wall and a filling without adhesion is a constant menace.—DR. WASSALL, *Items of Interest*.

Porcelain Inlay Work.—"Porcelain work is no lazy man's task. Go at it with all your might, and when you begin to be satisfied with the results it will be time for you to die, but you can die with the feeling that you have tried to be an up-to-date dentist."—W. H. TAGGART, *Dental Record*.

Cast Gold Fillings.—Cut out the decayed dentin thoroughly; fill the undercuts with gutta-percha; make a matrix of gold-foil as if for a porcelain inlay. Fill this with gold solder and cement to place with gutta-percha.—C. L. ALEXANDER, *Dental Cosmos*.

Canada Balsam for Fixing Inlays.—Inlays of porcelain treated with Canada balsam dissolved in benzol are much more durably fixed in position than when bedded in a film of oxyphosphate, provided an accurate fit has been obtained.—W. BOOTH PEARSOLL, *Dental Review*.

A Place for Inlays.—For large proximal cavities in bicuspid which would support only a phosphate filling, protect the surface with a porcelain inlay. It will last five or ten times longer than the cement alone.—I. N. BROOMELL, *Dental Cosmos*.

Removal of Matrix from Cavity.—After the matrix has been burnished to fit the cavity perfectly, pour hard, sticky wax into it while in place and then heat a small ball burnisher, work it into the wax and chill with cold water. The matrix can now be lifted from the cavity without marring it.—W. O. FELLMAN, *Dental Review*.

Removal of an Inlay Matrix.—After the matrix is perfectly formed, if it is filled with beeswax just flush, it can be removed from the cavity with a sharp pointed excavator without any danger of changing its shape.—L. M. MATTHEWS, *Items of Interest*.

Porcelain Facing; Changing Color.—If, before they are backed ready for investing porcelain facings are boiled for a minute in sulphuric acid and water, equal parts, and then backed with pure gold, there will be very little trouble with their changing color.—D. W. STANTON.

Porcelain Inlays. Selection of Color.—Selecting the color after the tooth has been dried under the rubber-dam is always misleading. The color must correspond with that of the tooth in its natural moist condition.—N. S. JENKINS, *National Dental Association*, 1899.

Inlay Impressions.—Substitute dental lac for gutta-percha and you will have a quicker, more rigid, and perfect impression. Warm a piece of the dental lac, a little larger than the cavity, press to place, cool with a jet of water, and remove.—*Dental Review*.

Oxyphosphate for Inlay Impressions.—Dust the cavity with pulverized soapstone and insert a pellet of quick-setting oxyphosphate, letting it extend over the edges of the cavity. When set remove, dust the surface with soapstone, and make a mold of the same material.—*Dental Cosmos*.

Setting Inlays.—Inlays set with Canada balsam dissolved in benzole are much more durably fixed than when embedded in oxyphosphate, provided an accurate fit has been obtained.—W. BOOTH PEARSALL, *Ash's Quarterly*.

Inlay Adhesion.—Before adjusting an inlay the cavity should be dried and wiped with cement liquid; the inlay should be treated in the same way and the surplus liquid wiped off. This will produce a stronger adhesion when the inlay is cemented.—W. H. UPJOHN, *Dental Summary*.

Posterior Porcelain Crowns.—Dr. Jenkins uses ordinary English teeth, such as are used for rubber plates, soldering the point to the dowel pin or pins, finishing the contour with his prosthetic porcelain.—W. A. COSTON, *Western Dental Journal*.

Matrix for Inlay Work.—The less the matrix is burnished in the deep parts of the cavity, and the more it is thinned out at or near the margins, the more nearly will the margins of filling and cavity meet.—C. N. THOMPSON, *Dental Digest*.

Gold Inlays.—Filling with inlays does away with the long and tedious sittings which are necessary when restoring large portions of tooth structure with cohesive gold or its combinations. In many instances these long sittings have precluded the use of gold entirely, because of the physical inability of the patient to endure such trying operations, while the fearful strain on the operator has been such in some cases as to deter him from attempting extensive restorations.—THOS. P. HINMAN, *Dental Brief*.

The Porcelain Inlay.—It is safe to adopt the rule that where utility and durability are of first importance no attempt should be made to use porcelain, but where the cosmetic effect is the principal consideration do not fail to use porcelain.—W. A. CASTON, *Kansas City Dental Journal*.

Porcelain Inlays; The Matrix.—The metal should never be annealed and the matrix introduced into the cavity after the final burnishing, as it is too easy a matter to distort the matrix in so doing.—CRAIG M. WORK, *Dental Summary*.

Anchoring Porcelain Inlays.—Porcelain sections and inlays may be securely anchored by means of platinum wire secured as pins are secured in porcelain teeth, the wire insuring a more secure hold in the cement.—W. A. CAPON, *Dental Office and Laboratory*.

Porcelain Inlays: Where not indicated.—Is there any sharp, definable line that marks the limits of the field of the porcelain inlay? Yes; exposure of the margins to the stress of mastication.—J. E. NYMAN, *Dental Summary*.

Impression for Porcelain Inlay.—In taking a cavity impression use albolin or some other lubricant, and take impression with archite. It sets very quickly and is very hard.—*Dental Summary*.

Baking Crowns.—Cut clay pipe-stems into one-half inch lengths and use them to support pin crowns when baking in the furnace. They will stand the heat of any furnace.—G. B. SPEER, *Dental Summary*.

Wedging Inlays into Place.—The soft wood of matches is preferable to orange-wood in wedging inlays into place, as the latter is liable to exert too much force upon frail edges.—C. N. THOMPSON, *American Journal*.

The Strength of Porcelain.—Any of the standard porcelains on the market are strong enough if they do not receive the full force of mastication, and none of them are strong enough if they do.—JOSEPH HEAD, *Dental Cosmos*.

How to Observe the Baking-point of Porcelain.—By throwing the light of a mirror into the furnace, the flow of porcelain can readily be detected.—C. J. LANGE, *Dental Brief*.

Inlay Retention.—I do not believe in baking pins into inlays, as they weaken the porcelain more than they give retentive security.—W. T. REEVES, *Dental Register*.

The Fusing-point of Porcelain Bodies.—Ash's and Close's high heat, about 2600° F. Consolidated, about 2500° F. Ash's low-heat, about 2400° F. Downie's, about 1800° F.

Gold Inlays.—A dull finish, such as is imparted by pumice, is the best for gold inlays.—T. P. HINMAN, *Items of Interest*.

CHAPTER IV

LOCAL ANÆSTHESIA—TREATMENT OF HYPERSENSITIVE DENTIN

Eucaïn in Painless Pulp Extirpation.—Moisten with alcohol and touch to finely powdered eucaïn hydrochlorate a bit of spunk the size to nicely cover the floor of the cavity. Place in the cavity so that the eucaïn is in contact with the exposed pulp. Fill the rest of the cavity with unvulcanized rubber, and apply light pressure with a ball burnisher as large as can be made to enter the cavity. Gradually, as it can be borne without pain, increase the pressure until considerable force is exerted. Remove rubber and spunk at the end of from three to four minutes, and usually the broach may then be inserted and the pulp removed without pain.—*Items of Interest.*

To Minimize Pain in the Setting of Crowns with Cement.—The cement-liquid coming in contact with hypersensitive gum-tissue frequently causes a severe spasm of pain. Paint the inner surface of the finished crown with carbolic acid. Dry the tooth, place the crown in position, and allow it to remain a short time; the small quantity of carbolic acid which will escape under the gingival edge will anæsthetize the gum, when the crown may be set with cement without causing pain. Alcohol should be at hand to overcome any possible cauterizing effect as soon as the operation is completed, but will not be necessary with a well-fitting crown.—F. W. STEPHAN, *Items of Interest.*

High Pressure Anæsthesia.—The advantage of this method over cataphoresis is the saving of time. The disadvantage is that it is not always possible to drill the pit into the cavity but manage to drill into a healthy part of the tooth and if drilled through the enamel it must be enlarged so that the sides of the enamel will not press on the enamel margin, as I have seen the enamel checked clear across the buccal surface in trying to make contact in this manner. On the other hand there is danger of carrying infection into the pulp unless the pit is drilled into healthy dentin.—D. H. ZIEGLER, *Dental Summary*.

Sensitive Dentin.—By adding just sufficient carbolic crystals to cocain hydrochlorate, and rubbing together with a spatula until the cocain is dissolved, a thick syrup is obtained which is escharotic, antiseptic, obtundent. With this we often obtain most gratifying results in the treatment of sensitive dentin in cavities of decay. It should be used with the rubber-dam, dryness to the verge of desiccation secured, applied warm, and treated *in situ* with the hot-air syringe, as hot as can be borne, and again dried before excavating.—C. B. ROHLAND, in *Dental Brief*.

Painless Pulp Extirpation.—Use the hydrochlorate of cocain and sulphuric acid—saturated solution. The broken-down pulp tissue, resulting from the pricking of the sulphuric acid and cocain into its substance, is reduced by sodium-potassium into a soapy material, which is readily removed from the pulp chamber and root-canals. The action of the sulphuric acid seems to devitalize the tissue immediately and allows a forward progress continuously until all the pulp is broken down into fine threads.—JOHN I. HART, *Cosmos*.

Arsenical Pulp Devitalization with Pressure.—Immediate pulp extirpation by pressure anæsthesia is not always practicable, especially if the canals are fine and tortuous. In such cases secure cocain anæsthesia by pressure; then place in the cavity arsenical cotton saturated with clove oil.

Apply pressure, repeating five or six times in about ten minutes. While the cocain anæsthesia continues the pulp absorbs sufficient arsenic to produce loss of vitality, and in a few hours, or the following day, the pulp can be removed and the canals filled.—JAMIE D. LORADE, *Dental Summary* (Trans. from *L'Odontolgia*).

Care of the Hypodermic Needle.—To keep the syringe in good order and the needle from corroding, make a solution of 90 parts glycerin and 10 parts carbolic acid; pour into a three or four ounce wide-necked bottle just sufficient of the solution to cover the whole of the needle when the two flanges of the syringe are resting over the top of the bottle, the barrel of the syringe being suspended in the center of the bottle.—*Federal Dental Journal*.

Alarming Symptoms in Anæsthesia.—Even when alarming symptoms occur during anæsthesia the result is rarely disastrous, because the first bad symptom noticed is stopping of respiration, and in experiments with animals death has always occurred from paralysis of the respiratory function, and whenever the breathing stops, if immediate artificial respiration be resorted to your patient will respond in a short time. You may ask, how is this done? In the first place see that the air-passages are open and free and that the tongue is drawn well forward and kept there. Then lower the head so that the respiratory center will be kept well supplied with blood. And follow this up with the movements of artificial respiration known as Sylvester's method.—JAMES F. HASBROUCK, *Dental Brief*.

Anæsthetics.—There never has been a patient anæsthetized to a state of complete anæsthesia who has not been placed in a dangerous condition. I have lived with anæsthetics most of my life. I have administered them thousands of times, and yet, the older I grow, and the more I do in the use of them, the more I feel the responsibility, and I never administer an anæsthetic without a feeling that this is the patient that may go.—T. W. BROPHY, *Dominion Dental Journal*.

Somnoforme.—As compared with other anæsthetics, with somnoforme the period of induction is a very short one, averaging about thirty seconds. Under ordinary conditions the patient goes to sleep without the least excitement, seeming apparently to fall into a quiet, natural sleep, the period of complete anæsthesia averaging about ninety seconds. The elimination of the drug is very rapid, the patient awakening in the most natural manner and without unpleasant after effects. There is no trace of asphyxia or cyanosis.—B. F. ENAY, *Items of Interest*.

Narcotile.—As a general anæsthetic in dental practice, narcotile, a constant and unchanging chemical product, offers the advantages of being rapidly assimilated by the respiratory organs and quickly eliminated from the body, with freedom from bad after-effects. Its general effects are similar to those of sulphuric ether, but more rapid than chloroform or nitrous oxid. During complete anæsthesia the action of the heart remains unchanged. Cyanosis never occurs and rigidity is not at all prominent.—F. A. WEED, *Dental Digest*.

Hyperesthesia in Erosion.—The chemical caustics like silver nitrate and gold chlorid are not very powerful, and discolor the teeth. I have used antimony chlorid with advantage, but as the caustic power of this salt is extreme the greatest care is required in its use. Such therapeutic use of it, however, is efficacious and free from inconvenience, with proper precautions, and it does not discolor the teeth. Protect the lip with a roll of cotton. Protect the application and retain it several seconds; rinse the mouth with a soda solution—four grains of bicarbonate to the litre of water. Usually one treatment is enough, but may repeat if necessary.—M. MICHAELS, *International Dental Journal*.

Sensitive Dentin.—In the treatment of sensitive dentin the ethyl chlorid spray gives very gratifying results if properly managed. It is by no means painless in its application, but is appreciably less so if a blast of cold air is first directed against the tooth, making the change of tempera-

ture less sudden. A pledget of cotton saturated with the liquid should then be gently brought into contact with the tooth or cavity and then removed, repeating it frequently, until it can be left in the tooth without excessive pain, when the tooth may be sprayed direct.—GEO. GOW, *Dominion Dental Journal*.

Sensitive Dentin.—Erythrophlein chlorid is the agent *par excellence* for the treatment of sensitive dentin. It has no caustic action, its effect being merely one of intense vasoconstriction. The insertion of the gutta-percha sealing is followed by no discomfort, the symptoms of pericementitis which may occasionally develop being very slight. Its absolute innocuousness makes it especially applicable to the devitalization of the pulps of deciduous teeth. A dressing of erythrophlein chlorid permits of painlessly excavating hypersensitive cavities. Remove at the expiration of twenty-four and *not more* than forty-eight hours.—M. ANDY, *L'Odon-tologie*.

Hypersensitive Dentin.—I know of no better local treatment than the old-fashioned carbonate of potassium in glycerin (saturated solution). I have used that remedy, both with and without the rubber-dam, with as much comfort as could possibly be obtained with any other remedy. It is applied on a small pellet of cotton; if necessary it may be sealed in the cavity, renewing it every day or two. It is effective even when dentin is so excessively sensitive that the touch of an explorer causes excruciating agony.—C. A. JEFFRIES, *International Dental Journal*.

Sensitive Dentin.—It should be borne in mind, in removing decay, that the most sensitive portion is at the periphery of the dentin just beneath the enamel, and that the fibrillæ have a direction perpendicular to the surface of the tooth. Much pain may therefore be saved if at the outset of the operation a few bold sweeps of the excavator be made around the circumference of the cavity, and that all subsequent cuts as far as possible follow a line from the center to the periphery.—RALPH W. STEWART, *Dental Review*.

Cocain Anæsthesia.—Means says that Reclus, who reports 7,000 operations under cocain anæsthesia without a death, insists on the observance of the following rules: (1) Never use a stronger solution than 5 per cent. externally, or 1 per cent. hypodermically. (2) Always have the patient recline during the administration of the anæsthetic and not get up for half an hour after. (3) Always have the patient eat and drink something before rising.—*Dental Brief*.

Guaiacol in the Extraction of Teeth.—

Guaiacol (chem. pure), 1 gramme:

Olive oil (sterilized and neutralized), q.s. to make 10 c.c.

For hypodermic injection, for tooth extraction, the effect of guaiacol is at least equal to that of cocain, and in certain cases in which the cocain does not produce the desired effect, as in periostitis, pure alveolar abscess, and radicular cysts, guaiacol produces perfect analgesia. Being entirely non-toxic and not caustic its use as an agent for the painless extraction of teeth should become very general.—B. MARECHAL, *Dental Cosmos*.

Pressure Anæsthesia in Pulp Devitalization.—To confine the medicament closely, fasten to the end of the instrument a piece of soft rubber in which has been fashioned a small chamber. Place in this a pellet of cotton saturated with the anæsthetic agent; warm to prevent thermal shock and place the opening over the exposure. By simple contact the pulp takes up enough cocain to soon permit of slight pressure, which must be gradually increased to a very considerable force.—R. B. TULLER, *Dental Summary*.

Cataphoresis—Painless Extirpation of Living Pulp.—

For the negative electrode I use the sponge dipped in warm water, containing 20 per cent. salt; the positive electrode, a pin bent into suitable shape, laid on a pellet of cotton saturated with a 20 per cent. aqueous solution of cocain, containing one or two drops of Calvert's carbohc acid (which preserves the solution for weeks). Living pulp extracted without pain to the patient.—V. M. MURR, *Pacific Stom. Gazette*.

Extracting when the Hypodermic Needle is Employed.—

Three fundamental rules which must be followed in order to ensure the desired results: First, render the area of tissue to be injected aseptic; second, *positively sterilize* your needle before injecting; third, remove all deposits about the tooth involved, otherwise infectious calculus will be crushed into the tissues by the beaks of forceps during the process of extraction.—L. O. GREEN, *Dental Brief*.

Where Pressure Anæsthesia Fails.—Teeth of old persons; teeth of inveterate tobacco chewers; worn, abraded, and eroded teeth; teeth with extensive secondary calcific deposits; teeth whose pulp canals are obstructed by pulp nodules; teeth with metallic oxids in tubules; teeth with leaky old fillings; badly calcified teeth—mainly all from one and the same cause; namely, clogged tubuli. In most of such cases no amount of persistent pressure will prove successful.—GEO. ZEDERBAUM, *Dental Register*.

Pressure Anæsthesia.—If a pulp is to be desensitized by the introduction of cocain under pressure the *first* step is a thorough opening, so that pressure may be applied directly over the pulp; *second*, the removal of all carious dentin; *third*, to so shape the cavity (with temporary cement walls if necessary) that the solution can be confined under pressure; *fourth*, thorough sterilization of the cavity.—F. G. WORTHLEY, *Western Dental Journal*.

Cataphoresis—Painless Pulp Removal.—A crystal of cocain hydrochlorid on the exposed pulp, a drop of water, and the positive pole (ball point electrode) will make the living pulp non-sensitive in four or five minutes. Then exchange ball point for a very fine platinum broach; dry out the cavity, reverse the current and insert the broach in the anæsthetized pulp, which will be entirely decomposed and can be removed and the canals filled at once. A few grains of common salt will hasten the decomposition of the pulp.—N. F. WINEMAN, *Dental Cosmos*.

Pulp Removal: Pressure Anæsthesia.—If the apical foramen is small and a free opening made before attempting removal, if the broach is gently slipped to the very apex and the pulp heroically removed, there will be very little bleeding, and what may occur will soon cease of its own accord, and then by washing out canals with alcohol and drying we approach nearer the ideal condition than can be attained by any other method.—R. A. ADAMS, *Dental Summary*.

Tooth Extraction—Local Anæsthetics.—Eucain in ten per cent. solution, injecting about five drops.—O. N. HEISE.

Five grains cocain, one-tenth grain atropia, ten drops carbolic acid, one ounce water.—W. D. SNYDER.

Cocain cataphoretically applied to the gum, using a two per cent. solution with from five to ten volts of current, as the patient bears it.—W. H. TODD.

Ether and chloroform, if used carefully, are safer than these injections. Nitrous oxid is better still.—C. R. BUTLER, *Dental Cosmos*.

Cataphoresis—Cocain Solutions.—We have tried guaiacocain, electro-cocain, and ordinary aqueous solutions of the cocain hydrochlorid, and think we get as good results from a twenty to thirty or perhaps fifty per cent. solution cocain hydrochl. in "meditrina" as with any other preparation. Most operators favor a strong solution of the cocain; some using it saturated.—*Committee Report, Den. Soc., State of N. Y., Dental Cosmos*.

Cataphoresis—Sensitive Dentin—Failures in Production of Anæsthesia.—In the class of teeth where there is evidence of the deposit of secondary dentin of dense quality, the irregularity of its structure seems in some cases to prove an insurmountable barrier to the passage of sufficient current to produce the anæsthetic effect of cataphoresis. In such cases it seems very doubtful if any length of application will succeed.—H. W. GILLETT, *Dental Cosmos*.

Cocain and Adrenalin Chlorid: Caution.—Reaction depends very largely upon the amount of disturbance produced in the blood-supply. So powerful an astringent as adrenalin chlorid makes a bloodless operation a possibility, but it also increases the dangers from secondary hemorrhage and other serious complications. In one case erysipelas was the complication, brought about, undoubtedly, through the profound debility produced in the tissue cells, rendering the parts more susceptible to infection.—E. T. LOEFFLER, *Dental Register*.

Cocain Solutions.—Employ four solutions—one with alcohol, one with chloroform, one with alcohol and chloroform mixed, and one with fifty per cent. solution sulphuric acid. Cocain mixed with all of these acts very beautiful. With the fifty per cent. sulphuric acid it makes a very oily-looking mixture, and is one of the best means for the reduction of hypersensitiveness of dentin. The sulphuric acid solution should be neutralized before fillings.—*Dental Register*.

Cataphoresis—For Sensitive Dentin.—The most favorable cases, as regards quick results, are in children, and in the teeth usually described as “soft.” Cavities which have not been previously filled yield more easily; this may not hold good when there is a good deal of new decay under a filling. Teeth that cut “hard” and that have had fairly tight fillings in them for some time present most difficulty and require most time.—H. W. GILLET, *Dental Cosmos*.

Cataphoresis—Salt Water Cocain Solutions.—Make the cocain solution with water which contains half a teaspoonful of salt to a two-ounce bottle of water. With the same voltage, the resistance seems to be very much less than when guaiacol was used. Use three grains of cocain to twelve drops of the salt water, holding the cocain over an alcohol lamp to dissolve it. There is never any precipitation.—S. L. STRICKLAND, *Pacific Stomatological Gazette*.

Painless Pulp Removal.—Apply to cavity one drop of adrenalin, a one-sixth grain tablet of cocain, and a fraction of a drop of formaldehyd. Produce pressure, lightly and steadily, gradually increasing until pulp is thoroughly injected. Then wipe cavity dry to remove surplus formaldehyd and make complete exposure; remove contents of pulp chamber. Repeat the adrenalin and cocain application and apply pressure sufficient to eject the solution through the foramen, when the pulp can be removed without hemorrhage.—CLYDE DAVIS, *Items of Interest*.

Sensitive Necks of Teeth.—Nitrate of silver, the usual remedy for extreme sensitiveness of the necks of the teeth, is objectionable for the anterior teeth because of the discoloration produced. Tannic acid is free from this objection and has been used with great success, placing a drop or two of glycerin on a slab and mixing it with tannic acid. Apply by means of a stick fashioned to a blunt point, rubbing it in very gently at first, gradually increasing the pressure until no pain is produced by hard rubbing.—S. F. HOWLAND, *International Dental Journal*.

The Aqueous Treatment of Sensitive Dentin.—This consists in causing a continuous stream of water—brought to the temperature which experience has shown to give the best results—to flow into the cavity while the excavation is being performed. This causes a remarkable diminution, if not complete loss of sensitiveness in the dentin. Water at blood temperature will give better results than 105° F., probably because the latter causes a dilatation of the capillaries.—A. E. SYKES, *Pa. Den. Gazette*.

Sensitive Dentin.—Two doses of chloral hydrate, of 10 to 15 grains each, taken one the evening before on retiring, and the other next morning before operation begins, is better than cataphoresis or anything else I have ever tried.—JOHN T. CREWS, *Dental Headlight*.

Sensitive Dentin.—We have one reliable standby—good sharp instruments and careful manipulation. Whatever bur is used should be selected with as little frictional surface as possible. A wheel bur will cut as much, with less pain, as a round bur, but a few sizes of round burs will answer the purpose, run at proper speed. I believe the only reliable thing for the use of the general practitioner is good sharp instruments, a steady hand and a little bit of sensible talk to the patient, if nervous.—F. T. VAN WOERT, *Dental Cosmos*.

Adrenalin Chlorid as an Adjunct to Cocain.—Use cocain with adrenalin as a solvent, in doses varying from one-sixth to one and one-half grains, when the physiological effects of cocain have not appeared and the patients have felt little or no pain. The best results are obtained from a cocain tablet which has no dilutant and is very finely divided before compression by long trituration.—CLYDE DAVIS *Items of Interest*.

Local Anaesthetic: Peroxid of Hydrogen.—Injected under the epidermis, peroxid of hydrogen produces an immediate and complete anæsthesia of the whole skin. I have used it for over a year in opening abscesses. * * * I do not think any absorption takes place, as the intercellular inflection from the gas generated seems to produce such pressure that the skin cuts like frozen tissue.—H. E. KENDALL, *Med. Record*.

Hypodermic Injections in the Gums.—A ten or twenty per cent. solution of chloretone in 75 per cent. alcohol is valuable as a topical application previous to the use of the hypodermic needle in the gums. The alcohol cuts the mucus and leaves the membrane absolutely clean with resulting sterilization of the field of operation; the anæsthetic action of the chloretone insures the minimum of pain.—T. A. GORMLEY, *Dental Register*.

Pressure Anæsthesia: Sensitive Dentin.—The use of pressure with obtundents marks a new era in the treatment of sensitive dentin. Carbolic acid, chlorid of zinc or trichloracetic acid, in full-strength solutions, applied to the desiccated and protected cavity, on a pledget of cotton wool, is covered over with a thick layer of unvulcanized rubber, and pressure applied by means of a flat-ended instrument for a minute or two, when an area of insensitive dentin will ordinarily be found to have been secured. A second application may be required at greater depth of excavation.—WM. SIMMS, *The Dental Record*.

Ethyl Chlorid.—There is a special field, for ethyl chlorid in cases of short operations upon persons who are not good subjects for nitrous oxid. As far as my own experience goes, it is in the cases of alcoholics and of the muscular, high-colored, thick-necked men that ethyl chlorid is particularly valuable. In such cases, I believe, if the dose is properly regulated, it can be perfectly safely given in the sitting position.—J. BLUMFIELD, *The Lancet*.

Adrenalin Chlorid: Caution.—Neugebauer reports that he has seen several cases of localized gangrene following the use of solutions to which adrenalin had been added for the infiltration method of local anæsthesia. Elderly persons were especially liable to this and he therefore cautions against the use of adrenalin for old persons.—M. I. WILBERT, *American Journal of Pharmacy*.

Painless Pulp Removal.—Wind a few fibres of cotton around the point of a thick nerve-broach; dip in a mixture of carbolic acid and caustic potash (Robinson's Remedy), and apply upon the exposed area, gradually increasing pressure. In two minutes the entire contents of the pulp-canal should be saponified. Enlarge the opening freely with large rose burs, and remove the pulp with a stiff, barbed broach.—HERMANN MÜLLER, *Archiv für Zahnheilkunde*.

Hypersensitive Dentin.—Hypersensitiveness of dentin is the result of pericemental irritation far more than of pulp irritation. The pericemental life of the tooth is markedly influenced by the irritative infection found always at the necks of untreated teeth. Removal of this infection is the removal of much of the cause of the undue sensitiveness of dental tissue.—D. D. SMITH, *Dominion Dental Journal*.

For Hypersensitive Shallow Cervical Cavities.—Dry the cavity and apply a mixture of equal parts deliquesced caustic soda and carbolic acid. The caustic soda must have deliquesced in the open air without the addition of water. Carefully protect the soft parts, and wash off the tooth after the application has been made.—ROBERT HUEY, *Pennsylvania Dental Journal*.

For Sensitive Dentin.—Add carbolic crystals to cocain hydrochlorate, and rub together till a thick syrup is obtained—escharotic, antiseptic and obtundent, giving gratifying results in the treatment of sensitive dentin. Use rubber-dam, dry almost to desiccation, apply syrup as above and dry with hot air syringe.—C. B. ROHLAND, *Ohio Den. Jour.*

Sensitive Dentin.—Hot carbolic acid applied to sensitive dentin will in most cases act as a satisfactory obtundent. Apply rubber-dam; with pliers dip a pellet of cotton in carbolic acid and hold over an alcohol flame until the acid fries; then bathe cavity with it. Repeat when sensitive dentin is again reached. Causes comparatively no pain.—G. B. STEWART.

The Avoidance of Pain in Dental Operations.—The wise dentist will not err on the side of undue economy in the use of burs. Burs should be so used as to bring the least pressure to bear upon the exposed dentinal fibrils in carious cavities. If the bur is as large as the orifice of the cavity pressure on the enclosed air will cause pain, quite absent if a smaller bur is first used.—WM. SIMMS, *Dental Record*.

Cocain Solutions for Extraction.—It is both reckless and careless to use anything higher than a two per cent. solution for hypodermic injection for the extraction of teeth, and I would favor no more than five grains to the ounce, which would be a one per cent. solution. With this one gets all but the toxic effect, and that he does not want.—D. G. MORROW, *Dental Era*.

Obtunding Sensitive Dentin.—Moisten the cavity freely and place in it a bit of solid sodium dioxid, allowing a drop of water to fall upon it. A brief moment of pain follows, after which the excavation may be proceeded with almost painlessly. For deeper work a second application may be necessary.—E. M. SOULE, *Items of Interest*.

Chlorid of Ethyl for Sensitive Cavities.—Chlorid of ethyl, carefully sprayed, first placing a pledget of cotton wool in the cavity, will nearly always permit the preparation of a cavity without giving any pain at all. It affords a rapid method of getting over a sensitive operation and if carefully applied is extremely useful.—H. W. P. BENNETTE, *The Dental Record*.

Cocain Solutions.—The toxic effects of cocain depend not only on the quantity of the alkaloid injected, but likewise, and to a great extent, upon the strength of the solution. Reclus, starting with a 20 per cent. solution, has gradually decreased the percentage until at the present time he employs solutions of from $\frac{1}{2}$ to 1 per cent., the maximum, with results all that could be desired.—J. E., *Dental Cosmos*.

Administration of Gas.—Gas does not act well where liquor and stimulants have been taken. Some people have the mistaken idea that they must "brace up" to have a tooth out. When they come to me with too much of that I tell them to go away and sober up before they can have gas at my hands. Tobacco and liquor contra-indicate the use of gas.—DR. STRAIGHT, *Dental Register*.

The Administration of Anæsthetics.—No one man has the right to operate and administer an anæsthetic at the same time.—E. T. DARBY.

Caution.—If an accident should happen in the case of a physician he is granted the privilege of signing a death certificate reading "death by shock." The dentist cannot do this; he must call in a coroner, which gives publicity, and he cannot afford to take that risk.—DR. BARTLETT, *Dental Era*.

Chloretone and Nitrous Oxid Gas.—In using chloretone in connection with nitrous oxid gas, as a general anæsthetic, I begin by administering five grains of chloretone half an hour before administering gas, and find its action very effective. It is much easier to anæsthetize a patient who has had a dose of chloretone, and only one-half to two-thirds the usual amount of gas is necessary to produce complete insensibility.—C. H. OAKMAN, *Dental Review*.

Dentinal Anæsthesia.—Dr. Thiesing recommends the use of ammonia solution for dentinal anæsthesia. The objectionable properties of solutions of ammonia salts, which preclude their being used hypodermically, disappear completely when used to obtund sensitive dentin. Ammonium carbonate, in solutions of five to twenty per cent., causes no pain and gives complete anæsthesia after five to ten minutes.—*Dental Register*.

Narcotile Anæsthesia.—The beauty about narcotile anæsthesia is its pleasantness. Patients are insensible to pain long before they are past talking. I can go ahead and operate, the patient being almost entirely conscious but feeling slight or no pain. I have given narcotile and removed temporary abscessed teeth for almost babies who would find no objection save that "that stuff made their ears roar." The patient always recovers completely in about five minutes and there are no after-effects.—W. H. REABEN, *Trans-Miss. Den. Assn.*

Anæsthesia.—The tendency to vomit, with the administration of ether, can be decreased, and vomiting checked in many cases, by the use of vinegar, or dilute acetic acid, poured on a piece of gauze and held before the patient's face so that the vapor is inhaled.—J. E. WILKINSON, *Dominion Dental Journal*.

Relief of Nausea after Anæsthetics.—Good results follow the use of drop doses of nux vomica every ten minutes. However, if blood is present in the stomach we must use means to get rid of it.—C. N. ABBOTT, *Dominion Dental Journal*.

Cocain and Adrenalin.—The addition of three to four drops of adrenalin to 100 ccm. of a 0.01 per cent. cocain solution makes the latter more efficient than a 0.1 to 0.2 per cent. solution without the addition. For tooth extraction Braun (Berl. Klin.) employs a solution of 1 to 1½ cg. cocain in 1 to 2 ccm. salt solution, with the addition of two or three drops of adrenalin; half injected in front of and half behind the tooth to be extracted, at the level of the root as near the periosteum as possible.—*British Medical Journal*.

Local Anæsthesia.—Insensibility of the mucous membrane is easily produced by the external application of a beta-eucain solution. The injection of a one per cent. solution (to which eight-tenths of a one per cent. solution sodium chlorid has been added), at body temperature, is absolutely painless and effects thorough anæsthesia, lasting twenty-five or thirty minutes.—*Items of Interest*.

Quinine Sulphate for Sensitive Dentin.—A very nervous lady had tried five different dentists in Paris to have her teeth filled, but the dentin was so highly sensitive that she could not submit to the operation. Schwarz gave her three powders of quinin, eight grains each, to be taken at intervals of forty-eight hours. The sensitiveness of the dentin was entirely lost, and he filled three cavities at the first sitting.—*L'Odontologie*.

Cocainizing Through the Nose.—Dissolve one of Mulford's tablets, each of which contains one one-hundreth grain adrenalin and one-quarter grain cocain, in a quarter-teaspoon of boiled water. Into this dip a cotton plug the size of a lead-pencil and about an inch long. Place this in the nostril over the roots of the teeth to be operated upon.—FRANK W. LORD, *Office and Laboratory*.

Pressure Anæsthesia.—In all pressure anæsthesia cases we have a pulp-stump which is vital and in a short time will be liable to post-extirpation pains. This may be avoided if a temporary dressing is used in which one of the ingredients is carbolic acid, or a thorough cauterization with carbolic acid made before dressing root-canals.—CLYDE DAVIS, *Dental Summary*.

The Hypodermic Syringe.—If one with leather packing is used, a little glycerin drawn into the barrel, after each operation, will keep the leather soft and make the plunger work smoothly. Before using the glycerin should be forced out and the barrel drawn full of alcohol a couple of times to sterilize it.—CHARLES A. TULLER, *Dental Cosmos*.

A Local Obtundent.—Melt together in a test-tube equal parts of menthol and cocain hydrochlorate and add an equal amount of carbolic acid. Keep in a well-stoppered bottle. Before applying the heated solution to the dentin wash the cavity with a warm alkaline solution and dry with alcohol and hot air. Also useful in reducing pain in fitting bands and removing deposits from roots.—*Dental Era*.

Shallow Erosion Cavities.—In sensitive superficial cavities, due to erosion or abrasion, a warm solution of trichloracetic acid in full strength, applied two or three times, the cavity being dried between applications, will often enable one to penetrate to sound non-sensitive dentin, when the cavity may be prepared as desired.—GEO. GOW, *Dominion Dental Journal*.

Gum Recession with Extreme Sensitiveness.—Very often the removal of the pulp gives not merely immediate and complete relief from pain, but actually prolongs the usefulness of the tooth, for the reason that when it is no longer painful cleansing is more thorough, and the life of the teeth consequently prolonged.—J. G. PALMER, *Items of Interest*.

Sensitive Dentin.—In cavities where the dentin is sensitive take a pledget of cotton, thrust it into the spirit lamp and let it ignite, and while hot place it in the cavity and leave it there. You can cut sensitive dentin very much better after this treatment.—DR. AUSTIN, *Dental Era*.

Sensitive Dentin.—A special remedy is a combination of chloroform, ether and menthol, applied with a hot-air syringe. This has seldom failed, even in the most extreme cases, it makes the operation at least bearable.—R. C. MACLAUGHLIN, *Dominion Den. Jour.*

Management of Sensitive Dentin.—The whole question, except in rare instances, resolves itself into the following summary: Manipulative skill on the part of the operator; knowing how to control the different temperaments among our patients; the invariable use of the keenest, sharpest instruments.—C. N. JOHNSON, *Dental Cosmos*.

Exposed Necks of Teeth.—When the gums are retracted, and the tooth sensitive about the neck, rub a little bicarbonate of soda along the edge of the gum with the finger, or dissolve about a teaspoonful of the soda in half a glass of water and rinse the mouth thoroughly with this.—L. BREWSTER, *Dental Summary*.

Sensitive Teeth and Dental Operations.—Advise your patient to avoid acids and to use an alkaline wash for a couple of weeks before and while undergoing dental operations, and they will suffer much less from sensitive dentin.—C. C. HARRIS, *Dental Cosmos*.

Obtunding Sensitive Dentin.—In cases of extreme and abnormal sensitiveness apply the rubber dam and place a bit of solid Na_2O_2 in the cavity and allow a drop of water to fall upon it. Dry the cavity and the excavation may be proceeded with almost painlessly. For deeper work a second application may be necessary. Wash the cavity well before inserting the filling.—EDWIN M. SOULE, *Items of Interest*.

Chloretone for Painless Pulp Removal.—For the removal of pulps in simple exposure or superficial pulpitis a saturated solution of chloretone in ether *par excellence*. Apply the rubber dam and force the saturated solution into the pulp with hypodermic syringe. Having antiseptic qualities it causes no injury to the root-canals.—D. W. BABCOCK, *Dental Register*.

Local Anæsthesia for Extraction.—The pain of extraction is caused by the tearing of the alveolo-dental ligament; therefore, if anæsthesia by cocain is to be effective it must act on the nerve termini of this ligament. To insure the efficacy of the injection it must be made at the level of the mucous membrane, which adheres closely to the periosteum and consequently not too near the neck.—E. SAUVEZ, *British Dental Journal*.

Cataphoresis—Sensitive Dentin.—The larger the surface covered by the positive pole, the greater will be the surface obtunded. By using a disk of metal over the saturated cotton, and then placing the platinum point upon the disk, a larger surface is covered and better results obtained.—L. L. BARBER, in *Cosmos*.

Obtunding Sensitive Dentin.—An apparatus for obtunding sensitive dentin by means of a stream of hot water directed into the cavity at the point of the bur, under pressure of compressed air, has the advantage over cataphoresis in that the effect is most instantaneous.—F. C. COLLINS, *Dental Register*.

Eucaïn.—I find eucaïn acts upon the gums much quicker than cocain, in fact in using it by the hypodermic syringe for the purpose of dissecting away a thick cap of the gum, together with a portion of muscular tissue, over a half erupted wisdom tooth it has acted instantaneously and rendered the operation absolutely painless.—CHARLES A. NASH.

Pulp Extirpation.—When you have removed a pulp, if a particle of nerve is left the electric current will find it out. The induction current can be applied by using a little dry battery, such as in one of the "ever-ready" lamps, using the secondary coil pulled out to its fullest degree and gradually pushed in until response is had. Solder to one end of a piece of German silver wire a little tube to hold a little cotton; wet the cotton and apply it to the tooth, the negative being held in the patient's hand. It is a better test, in pulp diagnosis, than heat, cold, or light.—DR. GREEVERT, *Dental Cosmos*.

Hypersensitive Dentin; Local Obtundent.—Melt together, in a test tube, equal parts menthol and cocain hydrochlorate and add an equal amount carbolic acid. Keep in well-stoppered colored bottle. Before applying wash the cavity with a warm alkaline solution and dry with alcohol and hot air. Heat the solution before applying.—*Dental Era*.

Painless Pulp Extirpation.—The pulp can be painlessly removed by saturating a small piece of sponge with one part formalin and four parts alcohol, and applying immediately over the pulp. Press it tightly against the tissue with a small piece of rubber. The pulp will be completely anæsthetized.—*Dental Digest*. ..

Obtundent for Sensitive Dentin.—Sharp burs, in a true handpiece, turned by an electric motor or good fast engine, are the best all-round obtundents of sensitive dentin extant.—THOMAS P. WILLIAMS, *Texas Dental Journal*.

Pressure Anæsthesia in Inaccessible Cavities.—There are many cavities between the teeth where pressure anæsthesia can only be applied by drilling in at a more accessible point. Are we not justified in many cases in proceeding in this manner? Of course the pit would be repaired by filling.—R. B. TULLER, *Dental Summary*.

Formaldehyd for Relief of Sensitiveness at Cervical Border of Molars.—From personal experience I can say that from $\frac{1}{3}$ to $\frac{1}{2}$ per cent. of the 40 per cent. solution of formaldehyd, in a mouth wash, greatly relieves sensitiveness at the cervical borders of the molars. If its use is omitted for a few weeks, however, the sensitiveness returns.—L. M. COWARDIN.

Hypersensitive Dentin.—In the use of zinc chlorid for hypersensitive dentin if an alcoholic chloroform solution is used instead of an aqueous solution the pain is greatly lessened and action is more rapid owing to the desiccating and obtunding effect of the chloroform and alcohol.—DR. HOPHEINZ, *Dental Cosmos*.

High-pressure Anæsthesia.—Why “try and plough with a crooked stick,” by applying cocain on cotton and then trying to force it through the tubuli by pressing soft rubber into the cavity, when by drilling a pit with a one-half bur the high-pressure does the work in a few seconds?—S. M. WEAVER, *Dental Register*.

Cataphoresis—Cocain Solution.—Use the solution of cocain in electrozone—twenty per cent.—it is reliable and satisfactory; make it fresh every day. A twenty per cent. solution of cocain hydrochlo. has been most frequently used, but I now prefer the solution in electrozone.—J. O. ELY, in *Digest*.

Obtundent for Sensitive Dentin.—A saturated solution of trichloroacetic acid in water has proved most successful. It is a powerful caustic and needs using with care. Avoid using it in close proximity to the pulp.—WM. SIMMS, *Dental Record*.

Painless Pulp Removal.—Equal parts of chloroform and carbolic acid. Using a French syringe (glass barrel, with glass piston, without needle, simply a canula), pack gutta-percha around the nozzle to prevent escape, and inject, forcing the piston down. The pulp can be immediately twisted out, blanched perfectly white, and insensible to pain.—E. T. DARBY, *International Dental Journal*.

Formalin in Pulp Removal.—Saturate a very small piece of punk with a solution containing 1 part formalin and 4 parts alcohol. Place on this some powdered cocain crystals, and place in cavity and cover with unvulcanized rubber. Press gently on rubber with ball burnisher until pulp is anæsthetized.—A. E. MANN, *Ohio Dental Journal*.

Pressure Anæsthesia.—Cocain is not always safe when used either hypodermically or injected into a tooth-pulp, as it will sometimes cause permanent absence of sensation in the parts surrounding. Even the most minute quantity, carried into the tissues, may cause very unpleasant results.—TRUMAN W. BROPHY, *Dental Review*.

Pulp Anæsthesia.—Prepare the cavity as usual. Place a pledget of cotton, saturated with cocain, directly over the pulp and fill the remainder of the cavity with a piece of vulcanite. Fit in the cavity, as prepared, a short piece of orange wood and direct the patient to bite down on this with increasing force.—E. T. LOEFFLER, *Dental Summary*.

Cataphoresis—Securing Electrode in Cavity.—Wrap a No. 30 platinum wire around a pledget of cotton and force same tightly into cavity, holding wire in place by imbedding in a drop of sticky wax on an adjoining tooth or clamp. We must have perfect insulation and perfect contact.—J. O. ELY, *Dental Review*.

Cocain Injection.—Before injecting cocain paint the gum with campho-phenique, full strength, to prevent pushing septic matter into the gum with the needle. The campho-phenique by benumbing the gums aids in the anæsthesia.—L. W. JORDON, *Dental Summary*.

Sensitive Dentin.—Isolate the tooth and wash out the cavity with absolute alcohol, evaporating with hot-air syringe. Then apply campho-phenique, allowing it to remain one or two minutes. Evaporate, and the cavity can usually be cleaned without abnormal sensitiveness.—I. D. REYNOLDS, *Dental World*.

Hypersensitive Dentin.—Fill the cavity with a paste made by mixing together zinc oxid and eugenol. This paste hardens in the presence of moisture, and when allowed to remain in the sensitive cavity for eight, fifteen, or more days causes the disappearance of all sensitivity.—DR. FAYOUX, *L'Odontologie*.

Obtunding Sensitive Dentin.—The use of a solution of cocain on the bur while excavating a cavity, running the bur very slowly, produces a very satisfactory degree of anæsthesia in advance of the bur, the solution being forced into the tubuli of the dentin.—I. EDW. LINE, *Dental Cosmos*.

Sensitive Dentin.—In shallow cavities good results come from applying a few crystals of menthol, dissolving it in the cavity with a drop or two of absolute alcohol and then throwing a steady but small stream of compressed air into the cavity until it is dry.—GEO. ZEDERBAUM, *Dental Register*.

Sensitive Cervical Margins.—If bicarbonate of soda is incorporated in the tooth powder used by the patient, sensitiveness will be relieved and be enabled to thoroughly masticate, bringing about a normal condition of the saliva, and alkaline powder will not be long required.—D. SPALDING, *Dental Register*.

Varnish for Sensitive Cavities.—"Fiddle-bow rosin," two drachms, dissolved in one drachm absolute alcohol, makes a varnish which gives excellent results in sensitive cavities. It is antiseptic, makes a hard glossy coating, and acts as an instant insulator.—B. L. THORPE, *Western Dental Journal*.

Sensitive Labial or Buccal Cavities.—Erosions at the gum margin can be prepared for the insertion of filling, with but little pain to the patient, by applying dry tannic acid. This will not produce any bad after-effects.—I. NELSON PLATT, *Dental Review*.

Sensitive Cavities at the Necks of Teeth.—The shallow cavities at necks of teeth are usually highly sensitive, but this can be quickly obliterated by pressure-anæsthesia treatment when we wish to fill them.—R. B. TULLER, *Dental Summary*.

Obtunding Sensitive Dentin: A Suggestion.—Chlorid of sodium being used in the animal economy to promote endosmosis, why would it not, in solution with cocain, aid in conducting the latter through the dentin?—N. C. LEONARD, *Dental Headlight*.

Adrenalin Chlorid.—To obtain the best results from this powerful vaso-constrictor for arresting hemorrhage after pulp extirpation, it must be used freely and persistently. It forms no blood-clot, is non-poisonous and non-irritating.—F. P. CRONKILL.

A Convenient Anæsthetic Agent.—Powdered ice, two parts, and common salt, one part, enclosed in a net of some thin material and laid directly on the part for five or six minutes will produce total insensibility. This agent has the advantage of being usually at hand anywhere.—W. J. KING, *The Critique*.

Dentin Obtundent.—Solution of ammonium carbonate. *Preparation:* Sublimation of one part of ammonium chlorate and two parts of chalk, and solution in four parts cold water. The liquor is volatile and has only a faint ammoniacal odor. To be applied in five to twenty per cent. solution; acts in five to ten minutes. Cannot be used for hypodermic injection, but the anæsthesia produced is very efficient.—DR. THIERSING, *Dental Register*.

Local Anæsthetic—Chloral Camphor.—Hydrate of chloral and camphor, equal parts, rubbed up and made in form of solution, can be advantageously used in extracting roots, lancing abscesses, and toothache. It is a valuable anæsthetic, anodyne and soporific.—C. R. TAYLOR, *Dental Review*.

Gagging or Vomiting after the Hypodermic Injection of Cocain.—This vomiting can be instantly arrested by administering oxalate of cerium in one grain doses, or by the aromatic spirits of ammonia, one-half to two drams in an ounce or more of water.—J. R. MEGRAW, *Dental Digest*.

Painless Pulp Devitalization.—Arsenic fibre, dipped in carbolic acid and cocain crystals, applied to an exposed pulp, and properly sealed, will destroy a pulp with little or no pain. Allow the preparation to remain two or three days only.—H. C. WEBB, *Items of Interest*.

Obtunding Sensitive Dentin.—For obtunding sensitive dentin I use only dehydration with alcohol and hot air, and such anodynes as chloroform, menthol, creosote, oil of cloves or carbolic acid, and in conjunction with a sharp bur.—HART J. GOSLEE, *Dentists' Magazine*.

Cataphoric Anæsthesia.—With cotton and the alternating current you can produce a local anæsthesia of the tooth, tetanizing the nerve through fatigue of the muscle.—PROF. NEISWANGER.

No medicament is required, the current itself contracting the muscles of the blood-vessels and producing anæmia of the parts.—JNO. S. MARSHALL.

Sensitive Dentin.—Carbolic acid crystals and cocain hydrochlorate rubbed together with a spatula until the cocain is dissolved, forms a thick syrup which is escharotic, antiseptic and obtundent, and gives the most gratifying results in the treatment of sensitive dentin.—C. B. ROHLAND,

A Local Obtundent.—Melt together in a test tube equal parts of menthol and cocain hydrochlorate and add an equal amount of liquid carbolic acid. Keep in well-stoppered bottles. Before applying the heated solution to the dentin, wash the cavity with a warm alkaline solution and dry with alcohol and hot air.—*Dental Era*.

Pressure Anæsthesia.—When pressure anæsthesia is resorted to in the removal of pulps every possible antiseptic precaution ought to be taken to avoid forcing septic matter into the apical space. Immediate root-filling should not be resorted to, but two to five days should be allowed for a restoration of the equilibrium of the circulation in the surrounding tissues.—E. T. LOEFFLER, *Dental Summary*.

Chlorid of Ethyl.—The use of chlorid of ethyl is very effective in all cases. Whether used for the extraction of a tooth or the opening of an abscess, it is not attended with the possible embarrassing results of a cocain solution.—P. B. McCULLOUGH, *Dental Brief*.

Local Anæsthesia.—Insensibility of the mucous membrane is easily produced by the external application of a beta-eucain solution. The injection of a one per cent. solution (to which eight-tenths of a one per cent. solution sodium chlorid has been added) at body temperature, is absolutely painless and effects thorough anæsthesia lasting twenty-five or thirty minutes.—HERMANN THIERSING, *Items of Interest*.

Sensitive Dentin.—In the treatment of hypersensitive dentin, zinc chlorid, as an obtunder, acts more rapidly in an alcoholic chloroform solution, owing to the desiccating and obtunding effect of the chloroform. Pain is also greatly reduced.—R. H. HOFHEINZ, *Dental Cosmos*.

Cocain Injections.—To avoid hemorrhage use in the cocain solution adrenalin. It is of great value where injections are made for the preparation of roots for crowns, there being much less bleeding from the gums.—A. N. GAYLORD, *International Dental Journal*.

Sensitive Dentin.—Many times when not able to prepare cavities in sensitive teeth take a drop or two of some perfume and put it in the tooth; the odor being diffused may soothe the mind of the patient and you can go on with the work the same as if you had used the cataphoric outfit. —A. W. HARLAN, *Dental Review*.

Obtunding Sensitive Dentin.—After the dam is in position and the cavity dried out as well as can be with cotton and spunk, dip a piece of spunk in carbolic acid and place in cavity; then heat a burnisher or ball-headed plugger and apply to spunk, gently at first and then with pressure, and repeat till all sensation is gone.—Y. T. COGHLAN, *Western Dental Journal*.

Filling the Hypodermic Syringe.—Drop a small piece of absorbent cotton into the fluid to be drawn into the syringe. Press the syringe against the cotton, thus filtering the solution; there will be no specks to stop the syringe and less risk of after-irritation.—*Welch's Dental Magazine*.

Pulp Removal; Pressure Anæsthesia.—Cocain is unnecessary. The anæsthesia is from the pressure alone and not from the cocain. It can be done with absolute alcohol also. Simply make pressure.—J. H. GASKILL, *International Dental Journal*.

Sensitive Dentin—Vapocain.—I have used vapocain with a great deal of success. By placing it in a cavity and tying rubber-dam around it, leaving it there for the heat to expand, I have had better success than in leaving it exposed to the air.—DR. VAN VLECK, *Cosmos*.

To Prevent Formation of Rust in Hypodermic Needle Points.—Put the needles in a bottle, cover with pure gasoline, and cork tightly. When wanted for use, blow through the needle and dip in alcohol, and the odor will disappear.—H. L. PRATT, *Dental World*.

Pressure Anæsthesia.—In handling as delicate an organ as the pulp we should use a solution not to exceed 1 or 2 per cent.; if we can produce an effect at all by careful manipulation we get it with less danger to the pulp.—E. T. LOEF-FLER, *Dental Register*.

Local Anæsthetic, Chloretone Formula.—To a saturated solution of chloretone add sodium chlorid, one per cent.; cocain crystals, one per cent.; sulphate of atropin, one-sixteenth grain of fluid ounce.—P. J. WOOLSEY, *Ohio Dental Journal*.

Pulp Extirpation, Pressure Method.—Carbolic acid is preferable to alcohol for taking up the cocain, as it is in itself a local anæsthetic, and is also a styptic; thermal changes are also less noticeable.—A. B. KELLY, *Dental Clippings*.

Peroxide Hypodermic Anæsthesia.—As an anæsthetic in tooth extraction the use of peroxid of hydrogen hypodermically is very much better than cocain. You cannot get a bad effect, and the anæsthesia is very pleasing.—FRANK N. BROWN, *Dental Review*.

Hypodermic Injections.—All hypodermic injections are rendered less painful, and will be more readily absorbed, if the active substance is dissolved in saline solution instead of plain water.—*International Jour. of Surgery*.

A Local Obtundent.—Chloreton dissolved in chloroform is a convenient obtundent in preparing cavities for filling or roots for crowning; it is also a germicide. It cannot be safely used hypodermically.—*International Dental Journal*.

Pressure Anæsthesia.—In pressure anæsthesia amadon is superior to rubber for a covering, as it takes up, instead of allowing to escape, the adrenalin and cocain.—MR. HEY, *British Dental Journal*.

Chloreton.—A ten or twenty per cent. solution of chloreton in 75 per cent. alcohol is valuable as a topical application previous to the use of the hypodermic needle in the gums.—T. A. GORMLEY, *Dental Register*.

The Hypodermic Syringe.—Use a thin lead washer in the needle point of your syringe; it will make a water-tight and aseptic joint and does not have to be removed for a long time.—*Dental Hints*.

Sterilizing of the Mouth-mirror.—Sodium peroxid is an immediate and perfect sterilizer, applicable to almost anything, and especially the mouth-mirror and other things which cannot be boiled.—C. J. PETERS, *Items of Interest*.

The Hypodermic Needle.—Before inserting the needle apply a drop of chloroform to the skin; it is antiseptic and anæsthetic.—FRANK POLLARD, *American Journal of Clinical Medicine*.

The Hypodermic Syringe.—Placing the hypodermic syringe in boiling hot water before using will prevent sore and inflamed gums after extractions.—DR. ISHAM, *Dental Forum*.

Local Anæsthesia.—Dissolve in eighty drops of a one-per-cent. solution suprarenal extract, one-twentieth grain hydrochlorate of tropo cocain, and one-thirtieth grain chlorid of sodium. Inject thirty to fifty drops.—*Merck's Annual*.

Local Anæsthesia.—In minor surgical operations the pressure induced by the hypodermic injection of sterilized water is often successful in producing local anæsthesia.—F. P. BEADLER, *Dental Hints*.

Sensitive Dentin.—A twenty per cent. solution of cocain with carbolic acid as the solvent, applied hot, will often make excavating sensitive dentin quite bearable.—N. S. JENKINS, *Dental Cosmos*.

Sensitive Dentin.—Two parts oil of cloves, with one part carbolic acid, sealed up in a sensitive cavity for several days, possesses great value.—E. SCHIEHOLM, *Dental Review*.

Pressure Anæsthesia.—Never use an essential oil in the cavity before applying the cocain; it simply retards the effect of the cocain.—DR. JAMES, *Dental Summary*.

Cocain Solutions.—In making cocain solutions, employ distilled water, to which phenic, salicylic or boric acid is to be added.—C. A. DUNDARE, in *Med. and Surg. Reporter*.

Adrenalin Chlorid.—This is a drug which deteriorates very rapidly and should be used within a short time after the bottle is opened, else it becomes acid and very irritating.—DR. SHEEDY, *International Dental Journal*.

The Hypodermic Needle.—Before inserting the needle apply a drop of chloroform to the skin; it is antiseptic and anæsthetic.—FRANK POLLARD, *Am. Jour. Clin. Medicine*.

Nirvanin.—Nirvanin must be boiled to make it a stable solution for hypodermic use. Two to four per cent. solutions are best.—*Dental Review*.

Warm Cocain Solutions.—If the solution of cocain is warmed before using, its anæsthetic effect is more rapid, more intense, and more lasting.—*Lancet Critic*.

Sensitiveness at the Necks of the Teeth.—A saturated solution of carbonate of potassium in glycerin, applied to the points of sensitiveness, will counteract the action of ferments and allay hypersensitiveness.—A. C. HART, *Items of Interest*.

Relief of Surface Sensitiveness in Shallow Cavities.—Carbolic acid, followed by alcohol, evaporated with warm air, seems to give the best results with the least accompanying discomfort.—C. N. JOHNSON, *Dental Cosmos*.

Cervical Sensitiveness.—Dry the tooth, heat a burnisher quite hot and burnish the sensitive part.—DR. HOLT, *Am. Den. Weekly*.

Hypersensitive Dentin.—In acute hyperæsthesia nervocidin surprises by its effects, suppressing in a few hours all sensitivity during excavating and without affecting the vitality of the pulp.—F. AGUILAR, *Pacific Dental Gazette*.

Sensitive Dentin.—Jarring the tooth with an automatic mallet, having a blunt-point planer in the cavity, aids materially in inducing the penetration of fluids into the dentin.—N. C. LEONARD, *Dental Headlight*.

Sensitive Dentin.—For sensitive places at the gingival margins rub with a soft stick of wood dipped in a solution of tannin in glycerin.—DR. HOWLAND, *International Dental Journal*.

Sensitive Dentin.—

Menthol	gr.xx
Etheris	f3ss
Chloroformi	f3j

This will not completely desensitize all dentin but it will give you aid in the painless preparation of sensitive cavities, especially when an extensive area is involved. Adjust the rubber dam, dip a pellet of cotton in the mixture and place it in the cavity. By the time your instruments are ready the normal heat of the tooth will have volatilized the liquids, driving the menthol into the tooth.—J. P. BUCKLEY, *Dental Digest*.

Local Anæsthesia with Orthoform.—

R. Orthoform neutral.	
Orthoform muriate.....	aa 0.1
Aqua distil.....	4.0

Dissolve the muriate in the distilled water, warm slightly and add the neutral orthoform. It meets all the requirements for a local anæsthetic; the anæsthesia lasts longer than cocain; there are no bad after-effects, as swelling or sloughing; the solutions are non-toxic, and several injections can be made at one sitting. There is very little hemorrhage, and the wound heals quickly.—H. PRINZ, in *Ohio. Den. Jour.*

Cocain Solution.—

Cocain hydrochlorate	4 grs.
Solution trinitrin (1 per cent.)	10 minims
Spirit thymol comp.	¼ fluid ounce
Distilled water q. s.	add 1 fluid ounce

The spirit thymol comp. is composed of benzo-boric acid, thymol, eucalyptol, oil of wintergreen, oil of peppermint, with extract of witch-hazel, alcohol, and distilled water.—WILLIAM T. WYCKOFF, *Dental Brief*.

Cocain: Formula for Local Anæsthetic.—

R. Cocain hydrochl	gr. v
Atropin sulphate	gr. 2-5
Boracic acid	gr. v
Distilled water	℥i

Of this mixture one can use twenty minims and only have one-fourth grain cocain. The atropin counteracts any dangerous symptoms and the boric acid acts as an antiseptic.—D. G. MORROW, *Dental Era*.

Adrenalin-cocain.—An adrenalin solution of cocain, on a roll of cotton, on the floor of the nose opposite the ends of the roots of the superior incisors and cuspids, makes possible the painless extraction, or cavity preparation, of all the anterior teeth. As a working formula:

R. Acidi borici	gr. iv
Cocain hydrochlor.	gr. xxiv
Adrenalin chlor.	gtt. xxiv
Aquæ dest.	q. s. oz. ss.

—O. A. LA GRONE, *Dental Office and Laboratory*.

A Local Anæsthetic.—

R. Cocain hydrochlorate	
Carbolic acid	ãã gr. x
Atropin	gr. 1-5
One per cent. solution nitroglycerin.	min. 1x
Water	f 3 ii

Almost perfection in the way of a local anæsthetic. No sloughing of gums; no heart trouble.—A. N. GAYLORD, *International Dental Journal*.

Local Anæsthetic.—

Cocain	9 grains
Antipyrin,	2 grains
Distilled water	1 ounce
Adrenalin chlorid (1-100 solution),	1 fluidrachm

This can be safely used in all cases, the adrenalin aiding in rapidly anæsthetizing tissue locally. It retards the absorption of the cocain by reducing the amount necessary and also by virtue of its action as a cardiac stimulant.—
B. B. ATCHISON, *Dental Register*.

Local Anæsthetic.—

R. Gelat. puri	3.0 gm.
Natrii chlorat.	0.6 gm.
Acid. carbol. cryst.	0.1 gm.
Tropacocain	5.0 gm.
Aquæ dest.	ad 100.0 gm.

With the use of gelatin, as above, very little, or practically no, bleeding accompanies the operation, and the danger of post-operative hemorrhage is absolutely eliminated.—FRITZ HARTWIG, *Dental Cosmos*.

Cocain Combination Formula.—Parke, Davis & Co., soluble tablets. One tablet in 25 m. water gives 2 per cent solution cocain.

R Cocain	gr. ½	
Sulphate morphia	gr. ¼	
Sulphate atropin	gr.	1
Sterilized water*	gtts. xxx	2

Sig.—Inject hypodermically gtts. v to xv. M.

N. S. HOFF, *Ohio Den. Journal*.

*Sterilized water—distilled water containing 8 per cent. listerin or enthymol.

Obtundent for Sensitive Dentin.—The following formula is recommended by Dr. C. N. Peirce:

Cocain	gr. v
Carbolic acid	gr. xx
Chloroform	3ss
Muriatic acid	min. x
Alcohol	3ij

—*Dental Brief*.

An Anæsthetic Free from Toxic Effects.—

R. Cocain mur.	grs. v
Boracic acid	grs. viii
Ext. hamamelis	
Aquæ dest.	āā ʒ i

Will not cause sloughing.—*Items of Interest.*

Pulp Removal.—Cataphoresis.

Cocain	grs. xviii
Aconitin	gr. o. i
Thymol sol	q. s. ʒ j

Adjust rubber-dam and place in the cavity a pellet of cotton saturated with the above. Apply positive current and turn on 15 or 18 volts. When the pulp is anæsthetized (a second application may be necessary) remove immediately.—W. W. MOOREHEAD, *Ohio Den. Jour.*

Local Anæsthetic.—

Cocain	grs. xv
Glycerin	ʒ v
Sulphate of morphia and atropia	gr. j
Carbolic acid	gtt. ii j
Distilled water q. s. to make	ij ʒ

—CLYDE PAYNE, *Pacific Gazette.*

An Efficient Anæsthetic.—

R. Cocain hydrochl	grs. ij
Carbolic acid	gtts. x
Glycerin	ʒ i
Listerin	ʒ i
Aqua. dist., add q. e.	ʒ ij M.

W. D. DALRYMPLE, *International Den. Jour.*

CHAPTER V

SPECIAL DRUGS FOR SPECIAL CASES

Orthoform Cotton.—Saturate cotton with a saturated solution of orthoform in cotton. Dry and keep in convenient bottle. Very useful for packing the alveoli after extraction, to prevent pain; also other wounds liable to be painful, such as pyorrhœa pockets, exposed pulps, lacerated gums after extraction of impacted third molars, etc.—*Dental Register*.

Trichloracetic Acid.—Trichloroacetic acid in dental practice has a wider range of application than any other single preparation. First, it is most excellent in the treatment of pyorrhœa, arresting the accumulation of pus in very short order. In the treatment of putrescent pulp-canals it acts like a charm; carefully applied to spongy gums it gives better results than anything else; in pericementitis arising from calcis deposits it is excellent. It is both escharotic and astringent, and it destroys abnormal surface tissue and purifies the same in a few moments after being applied.—H. C. McK., *Dental Brief*.

Neurocain.—I have found the preparation called "Neurocain" most useful. It is pure cocain hydrochlorate in little pellets $\frac{1}{8}$ inch long, weighing 1-12th gr. Its chief advantage is its easy solubility. One of these pellets, or a portion of one, can be taken up in the dressing forceps and placed exactly over the exposure and moistened with a very small quantity of adrenalin-chlorid; in a few seconds you have a concentrated solution ready for pressure.—J. A. FOTHERGILL, *British Dental Journal*.

Disinfection of Ulcerated Surfaces.—To prevent the superficial coagulation of an ulcerated surface in the mouth, while disinfecting with bichlorid solution (1 : 2000, as hot as can be borne), it is always well to add three minims of acetic acid to every two ounces of the bichlorid solution. Or the surface of an ulcer on the gum may be washed and disinfected with ten per cent. argyrol instead of the bichlorid.—A. W. HARLAN, *Dental Cosmos*.

Oil of Cloves.—Oil of cloves is essentially non-irritating, and imparts a quieting and soothing effect not obtained by any of the other oils. As an antiseptic it is sufficiently potent to destroy most forms of bacteria found in the treatment of pulpless teeth. The combination of these two qualities makes it especially desirable in treating teeth where infection has passed through the apex and set up inflammation in the surrounding tissues.—J. R. SHANNON, *Dental Digest*.

Cocain Antidote.—Oppose the only unpleasant feature about cocain—the contraction of the blood-vessels. If you will exhibit with it, say, one-fiftieth of a grain of glonoin, which you can get in hypodermic tablet triturates, you will have no bad results unless the patient absorbs at least a grain or so of cocain.—R. H. M. DAWBARN, *Dental Cosmos*.

Cocain Poisoning.—Rapid and feeble pulse; irregular respiration; dizziness; cold perspiration; pallor or cyanosis of the skin and mucous membrane, and a tendency to syncope. Whiskey, brandy, or aromatic spirits of ammonia should be given to combat the condition. Amyl nitrate, five to ten minims, by inhalation, is also indicated.—*Dental Brief*.

Nitrate of Silver Antidote.—The use of a solution of sodium chlorid after the application of silver nitrate to any of the mucous membranes will do away with the great discomfort to the patient resulting from the application of this drug.—WALTER GRIESS, *Therapeutic Gazette*.

Test for Peroxid of Hydrogen.—If there is any reason to doubt the strength of peroxid of hydrogen, drop a crystal of permanganate of potash into the doubtful fluid. The violence or otherwise of the reaction will gauge how nearly the solution is up to the standard.—G. F. BUSH, *Dominion Dental Journal*.

Haemophilia.—Perhaps the administration of calcium chlorid is the most scientific treatment. Cases are cited where this drug has been used with wonderful success. On a man of 20—alveolar abscess—incision $\frac{1}{8}$ inch long; profuse hemorrhage in spite of pressure and styptics. He had several times bled until he fainted. Calcium chlorid was given in grain doses every two hours; after three doses the blood formed a firm clot. Worthy of trial, though in some cases no benefit resulted.—CHAS. A. PORTER, *International Dental Journal*.

Camphor Powder.—Moisten camphor with alcohol, and it can be rubbed into an almost impalpable powder.—*Dental Summary*.

Oil of Cassia.—While the most potent of the essential oils as an antiseptic, it is also a most powerful irritant, and the places are few where it can be used successfully. If left in contact with the soft tissues it will form a blister in twenty-four hours.—C. H. WALSH, *Dominion Dental Journal*.

Alcohol Injections in Neuralgia.—Oswalt injects 1 or 1.5 c.c. of 80 per cent. alcohol, to which .01 gm. of cocain or stovain has been added, making the injection along the trunk of each of the branches affected, at the point where they emerge from the bone. He has never had the slightest mishap or unpleasant by-effect. The pain was arrested at once. In at least 90 per cent. of the cases the neuralgia was cured by the procedure.—*Journal of the American Medical Association*.

Adrenalin-cocain.—Congested pulps are difficult to destroy, the congested condition preventing the absorption of the agent used. Because of its constricting influence, the use of adrenalin-chlorid will relieve this congestion and put the pulp in condition to absorb the cocain and bring about the desired result. Therefore the use of this combination of the two drugs is most useful and helpful.—C. C. HARRIS, *Dental Cosmos*.

Acute Pericemental Inflammation; Leeches.—In a case of severe pericemental inflammation, due to having drilled too close to the pulp, with a very small drill in the hand-piece perforate the process to as near the apex of root as possible; then apply leech after leech until six are well filled.—DR. U. SMITH, *Pacific Dental Gazette*.

Silver Nitrate.—See that all the teeth back of the canines are given a good treatment with a saturated solution of silver nitrate as soon as possible after eruption. Apply it with a small swab, letting it stay a minute and pushing it with an explorer down into the sulci. The staining is only superficial and caries is generally prevented, and if it occurs it is greatly retarded.—H. F. HAMILTON, *International Dental Journal*.

Formaldehyd in Blind Abscess.—Secure free access to root-canals, open as far as possible, using sulphuric acid, 50 per cent., and follow with hydrozone. Dry as thoroughly as possible, and place in each canal a wisp of cotton saturated with formaldehyd, and seal with gutta-percha stopping for a week or ten days. Should formaldehyd drop on tongue, cheek or lips, swab with cotton dipped in grain alcohol.—J. H. HANNING, *Dental Headlight*.

A Substitute for Iodoform.—Where iodoform is used to any great extent, and the odor is objectionable, an excellent substitute will be found in carvacrol iodid, the germ-destroying qualities of which will be found far superior to those of iodoform.—*Items of Interest*.

Dormant Abscess.—Apply the dam, thoroughly sterilize the field, remove as much caries as possible without opening into the chamber (or, if in cavity, drill as far into the dentin as safe, without reaching the chamber), and seal in a paste of paroform, oil of cloves, and trikresol; leave it from two to four days. This will penetrate through the tubuli and disinfect well up into the root, so that at the next sitting the chamber can be opened and treatment proceeded with without danger of stirring up a hornets' nest.—ELGIN MAWHINNEY, *Dental Review*.

Hydrogen Dioxid.—A great many cases of necrosis of the thin margins of the alveolar process are brought about by the injudicious use of hydrogen dioxid. The preparations have to be preserved at all temperatures about 60° with acids, and its injudicious use will result in a great deal of destruction.—A. W. HARLAN, *Dental Cosmos*.

Thymocamphene.—As a disinfectant canal dressing to two drachms each of thymol and phenol one drachm of camphor gum is added. Mixed in a dry test tube and fused with low heat, the camphor thoroughly dissolves and the result is a stable liquid at ordinary temperatures.—*Dental Register*.

For Erosion.—A paste of milk of magnesia and prepared chalk, applied around the necks of the teeth before retiring, will remain longer than any preparation yet tried. Spread on a piece of thin muslin and placed under the lip at night it will be found efficient in very wet mouths.—*Dental Summary*.

Adrenalin the Antidote to Cocain.—Adrenalin is the ideal antidote for cocain poisoning, and when combined with that drug neutralizes all toxic effects. I have never seen any untoward results, though I use a grain or a grain and a half in operations about the face.—CLYDE DAVIS, *Items of Interest*.

Odontalgia.—For the relief of local odontalgia caused by inflammation of the pulps use acetate of morphia and clove oil, applied on cotton and sealed in for a day or two, then use arsenic for devitalization, sealed in with gutta-percha.—K. P. ASHLEY, *Western Dental Journal*.

Soziodole.—Prophylactic in threatened periostitis and gingivitis. Apply to the gum directly over the root of the affected tooth. Apply at night on cotton tampon; through the day apply by means of moistened finger tips.—DR. BUCKEISEN, *Pacific Stom. Gazet*.

Hydrogen Peroxid; Precaution.—Hydrogen peroxid is a very far-reaching agent, carrying destruction to the media in which bacteria are growing, yet it is very harmful in the presence of granulations. A sinus which would naturally heal very quickly as soon as granulations are well formed may be kept open for months by the improper use of this most valuable agent.—ROBERT T. MORRIS, *Dental Cosmos*.

Adrenalin-cocain Solution.—(1) In a small glass dish (as a salt cellar) place one or two drops of water; (2) add one-sixth grain compressed tablet cocain (Wyeth's) and stir until it makes a clear solution; (3) add four to six drops adrenalin chlorid; (4) add witch-hazel, quantity sufficient to fill hypodermic syringe.—CLYDE DAVIS, *Items of Interest*.

Gingivitis.—In simple gingivitis nothing is better than painting the whole gum with a saturated solution of potassium iodid (it matters not if the patient swallow a little). Do this daily for four or five days. Then give soziodol internally (gr. iii) three time daily, after meals.—*Dental Review*.

The Use of Alkalies in Believing Pain.—Bicarbonate of soda, mixed with laudanum or cocain, applied on cotton in the cavity of an aching tooth, will often relieve pain.—L. BREWSTER, *Dental Summary*.

Formaldehyd in the Treatment of Alveolar Abscess.—From one to three drops formaldehyd, placed with minim syringe, will cause granulation in alveolar fistula. Applied at time of root dressing it will hasten cure, generally making short work of abscesses with fistulous opening.—J. H. HANNING, *Dental Headlight*.

Odontalgia.—A mixture of equal parts chloral hydrate and camphorated water is a valuable anodyn, when applied locally for odontalgia, saturating a small quantity of cotton with the mixture and placing it in the cavity; also for periodontitis, applying it to the gum over the affected tooth.—C. R. BALDWIN, *Dental Summary*.

Creosoted Charcoal Points for Alveolar Abscess.—Dry out root-canals, dress with oil of cassia; insert a creosoted charcoal point and seal with chloro-percha and cement. A week later an upper lateral so treated received a large gold filling with no subsequent trouble.—E. R. TAIT, *Pacific Medical Dental Gazette*.

Mentho-phenol.—Melt together three parts menthol crystals with one part phenol crystals. This is useful as an analgesic, applied to an aching pulp or to painful tissues of socket after tooth extraction. It has marked antiseptic properties, but is not disinfectant in the degree required for treatment of putrescent conditions.—J. MORGAN HOWE, *International Dental Journal*.

For Periostitis.—To a saturated solution of iodine crystals in absolute alcohol add one part of tincture of aconite and one part chloroform.—*British Journal of Dental Science*.

Iodoform.—While iodoform may not be in itself antiseptic, yet when it comes in contact with the tissues something is evolved which inhibits the growth of microorganisms, and at the same time stimulates the parts to healthy granulation.—THOS. L. GILMER, *Dental Digest*.

Treatment of Abscesses.—Thymol dissolves in oil of eucalyptus and forms a valuable agent in the treatment of alveolar abscesses, especially the mild forms of chronic blind abscesses.—GEO. W. COOKE, *Western Dental Journal*.

Hæmophilia.—Very little can be done for this disease except to improve the general constitution. Local hemorrhages are best controlled with compression, gelatin, and adrenalin, but the latter two should never be injected subcutaneously.—H. SAHLI, *Medical News*.

Odontalgia: Treatment with Chloral Hydrate.—Use a solution of fifteen parts of chloral hydrate in one hundred of glycerin. A pellet of cotton is saturated with the solution and carefully introduced into the cavity. The pain ceases at once.—*Le Monde Dentaire*.

Antral Medication.—Harm may be done in antral work by using caustic and irritant drugs. A ten per cent. solution of chinazol is effective for disinfection, and is stimulating without producing irritation.—W. A. COOK, *Ohio Dental Journal*.

Facial Neuralgia.—Dr. Tourtekot discussed the subject of facial neuralgia and reported four severe cases cured in three or four days by injections of alcohol at 60°, after having exhausted the long list of therapeutic agents usually available in cases of this sort.—*Revue de Stomatologie*.

Iodoform.—There are several substitutes for iodoform which act much in the same way and have not its objectionable odor. The best of these is iodol which contains 90 per cent. iodine.—H. LEONARD DARRELL, *Dental Record*.

Protargol for Suppuration.—Protargol is an excellent remedy in all cases of suppuration. From ten to fifteen per cent. solution seems to act best. It does not stain like silver nitrate, and is not caustic. —*Dental Review*.

For Neuralgia.—Equal parts of benzoin and peppermint oil, rubbed on the affected part or sprinkled on a cloth wrung out of hot water, acts like a charm in many cases.—*Pacific Stom. Gazette.*

Neuralgic or Muscular Pain.—Guaiacol mixed with equal parts of glycerin and applied over the seat of neuralgic or muscular pain will always give quick relief.—*Medical Summary.*

Reflex Pain from Nodules, Pulpitis, etc.—When a pulp cannot be immediately devitalized, on account of some obstacle or other, the following combination proves, in a majority of cases, a happy one:

B. Acetanilid	gr. viii
Phenacetin	gr. xv
Caffein citrate	gr. xv
Misce et ft. pulv. no.....	viii

Sig.—One to be taken every two hours.

—LEO GREENBAUM, *Pacific Dental Gazette.*

Chloroform Liniment.—

Chloroform.....	℥ii
Ether	℥ii
Alcohol	℥i
Gum camphor	℥i.

This is especially useful in painful conditions following an arsenical application, insertion of crown or bridge, and after-pains of extraction, opening alveolar abscess, etc. Apply to the gum on a tuft of cotton saturated with the liniment.—WM. H. TRUEMAN, *International Dental Journal.*

A Hemostatic.—

B. Common resin, pulv	℥ iv.	
Carbolic acid, 95 per cent.	℥ iij.	
Chloroform	℥ iij.	M.

Make a short thick cotton rope, larger than the wound to be treated. Moisten the end well with the compound, and plug the cavity tightly. The bleeding will cease almost as if by magic.—J. V. WICKS, *Items of Interest.*

Pericementitis.—Tie a strong cord around the root and make traction; then paint the gingival margin of the gum with two or three heavy coats of compound tincture of iodine; then give the tooth a rest.—*Dental Review*.

Ptyalism.—For tender, bleeding gums, from any cause, associated with fetid breath:

Formaldehyd (40 per cent.)	3i
Thymol	gr. x
Tincture Benzoini Comp.	3ij
Alcoholis	q. s. ad 3iij

Teaspoonful in a glass of water as mouth wash, every three hours.—*Medical News*.

Inflamed and Spongy Gums.—When a patient complains of bleeding gums on brushing the teeth, I prescribe the following:

R. Plumb. acetat	gr. x
Tinct. opii	3i
Aqua rosæ	q. s. ad 3i M.

Sig.—Apply on cotton two or three times a day. Shake well before using.

—J. R. MEGRAW, *Dental Digest*.

Painful Erosion.—The following application to eroded spots that are painful will be found useful:

R. Gum mastich (powder)	3i
Zinci chloridi	min. v
Chloroformi	3ss

To be used as a paint.—J. ROYSTON, *Dental Record*.

Treatment of Painful Eroded Spots.—

R. Gum mastic (powder) ..	3i
Chloroform	3 ss
Zinc chlorid	gtt. v

To be used as a paint.

This will be found useful, used by the patient with instructions to dry the tooth and paint on the solution, allowing it to harden while the tooth is kept dry.—J. ROYSTON, *Dental Record*.

For Soothing Irritated and Lacerated Gums.—

R. Boro-glycerinmin. x
 Resorcingr. x
 Eau de Botôtmin. v
 Water (105°F.)min. xc. M

Sig.—Inject between gum and root. Have patient hold in mouth two minutes or longer.

—*Dental Review.*

Pericementitis.—If, instead of using equal parts of aconite, iodin and chloroform, you use this prescription:

R Tinc. Aconiti (rad.).....℥i
 Chloroformi℥iv
 Mentholgr.xx

you will get excellent results.—J. P. BUCKLEY, *Dental Digest.*

Smoker's Gingivitis.—

Salol1 part
 Tinc. catechu4 parts
 Spts. menth. pip.120 parts
 Teaspoonful in half a glass of tepid water, as a mouth-wash.

—*Indian Medical Journal.*

CHAPTER VI

ANTISEPSIS, PROPHYLAXIS, STERILIZATION, ETC.

Aseptic Broach-holder.—Take a spring tempered brass wire, size of wire B & S gauge No. 11, and drill a hole about one-half to three-fourths of an inch with a drill about the same size as the universal broach. Then cut off, making it three and one-half inches long. Take any barb broach, seizing it with a flat nose plier, and bend the shank about one-fourth of an inch at an angle of about 45 degrees and force it into the socket in the handle, and you have a broach-holder that will be a pleasure to use, as it is aseptic. Have the holders nickel-plated. Any size of wire that suits can be used.—C. B. POWELL, *Dental Brief*.

Oral Prophylaxis.—Cleanliness is the essential thing in oral prophylaxis, but its accomplishment is not such a simple matter as ordinarily considered. Carbolic acid and bichlorid solutions, held in the mouth, come in contact with only those germs that are superficially located and destroy them. When hydrogen dioxid is used it oxidizes the organic deposits about the teeth, loosens up the secretions about the gums, and sets free germs that were at first inaccessible to the action of carbolic acid or bichlorid solutions. If, *after* the germs are thus set free, carbolic acid or bichlorid solutions, or further quantities of hydrogen dioxid be used, the most desirable state of asepsis is obtained.—G. V. I. BROWN, *Dental Digest*.

The Use of Mouth-washes.—Enough of a mouth-wash should be taken in to thoroughly bathe the parts when the cheeks and lips are distended, forcibly swishing it about in the mouth, keeping this up for at least five minutes, or, better still, ten. The distention of the space with the mouth-wash not only cleanses the parts, but it begets a habit of movement of the surrounding muscles, so that these spaces do not collect material that becomes foul and infects the whole buccal cavity.—W. J. TURNER *Dental Cosmos*.

Cleansing the Teeth.—For cleansing teeth I use a germicidal agent that is made of iodol, salol, dissolved in chloroform and alcohol, to which is added a small quantity of oil of cinnamon or oil of cloves. I apply this with a camel's hair brush, or bibulous paper, to the dry teeth. Allow it to remain a minute or two, and follow with a mixture of iodine and chloroform, equal parts, allowing this to dry.—H. C. REGISTER, *International Dental Journal*.

Bromo-chloron as a Disinfectant.—Bearing in mind that bacteria cannot live in its presence, it seems to me there is a wide range of usefulness for this agent. It is non-irritant, non-escharotic, and non-toxic; colorless, almost odorless, and tasteless. Its action is confined to dead matter; it will not attack the tooth substance nor anything living and animal. It destroys bacteria and burns up all sorts of dead material. It has many advantages over all the other reagents, without any of their obvious disadvantages.—D. W. BARKER, *Items of Interest*.

Silver Nitrate: Precaution.—After cleansing the teeth, and in all infectious conditions of the gums and oral cavity, I use very frequently a 10 per cent. silver nitrate solution, applied on a small swab. To prevent and neutralize the escharotic effects first apply tincture of iodine liberally over the gums and about the teeth (but not in the cavities, as the teeth would discolor). Also follow the silver nitrate with more iodine, which prevents any free silver nitrate remaining.—OTTO HOLLINGER, *Dental Review*.

Antiseptic Fillings.—An antiseptic, incorporated in oxyphosphate of zinc, gives a good foundation for a metal filling and has sufficient strength to protect the pulp from pressure. Hydronaphthol is a powerful antiseptic and at the same time non-toxic and non-irritant, and has no disagreeable odor. For convenience in using keep hydronaphthol mixed with cement powder in different proportions, mixing by weight, ranging from 1 to 1 to 1 to 5 for cavities so deep that all the infected dentin cannot be removed, to 1 to 20 under gold, or 1 to 100 for setting an inlay.—E. M. ROGER, *Dental Brief*.

Sterilizing the Mouth.—Dr. H. C. Register says that he has a number of patients who visit him every ten days for treatment of the mouth. He uses a germicidal wash that is colored, so that it will stain any mucoid deposits on the teeth. He uses it as a spray, with high pressure of condensed air, and blows it in between the teeth and into alveolar pockets. If any of the teeth are not cleaned by it, the coloring material will indicate the places where hand polishing with abrasives should be used to completely free the teeth from any deposit that is likely to set up caries, or to serve as a focus of infection.—*Brief*.

Nitrate of Silver.—See that all the teeth are given a good treatment with a saturated solution of nitrate of silver, as soon as possible after eruption. Simply dry off the surfaces and put on the solution with a small swab, letting it stay a minute, during which time push it with an explorer down into the sulci. This is an invariable rule, carried out with great success for the above length of time. Decay is generally prevented, or when it does occur is greatly delayed.—HARRY F. HAMILTON, *International Dental Journal*.

Sterilization of Broaches, Burs, etc.—Immediately after using, scrub thoroughly with a good bristle brush and an abundant lather of some good detergent soap, rinse under

a stream of very hot water, dry each one carefully, and lay between the folds of a sterilized towel. Just before using dip in absolute alcohol and pass it over a flame. The minute adherent quantity of alcohol will be burned off without injury to the temper of the finest instrument.—S. E. KNOWLES, *Pacific Dental Gazette*.

Prophylaxis.—That oral prophylaxis has come to be a recognized factor in saving the teeth and health of our patients, no one can deny. By the use of this term, prophylaxis, we imply a much broader meaning than is given by many who know so little of the word as to construe it as the simple cleaning of the teeth. It is "the surgical or manipulative treatment for the preservation of health" and implies all forms of service which have for their results the improvement or maintaining of health.—LEVI C. TAYLOR, *Dental Brief*.

Bleaching Enamel with Sodium Dioxid.—When sodium dioxid is melted on ice a thick paste of the undischarged sodium dioxid can be obtained which, when placed upon the dried enamel and heated with a hot instrument, will give up a tremendous quantity of nascent oxygen. This will bleach the stained enamel of a tooth in which the pulp is alive. It should be carefully washed off with water, and neutralized with a weak acid.

—J. P. BUCKLEY, *Dental Cosmos*.

A Perfect Dental Antiseptic.—Solidified formaldehyd possesses all the qualifications necessary to a perfect dental antiseptic. It is the most penetrating antiseptic ever known; it is soluble in water; it does not produce a coagulum, thereby shutting itself out. Its toxic-escharotic effect is *nil*, and pain seldom or never follows its application, except in dead teeth, when there is some pain and soreness, both of which invariably subside within a few hours.—F. B. LAWRENCE, *Dental Register*.

Nitrate of Silver as a Tooth Stimulant.—The external use of nitrate of silver on the tooth surfaces acts as a stimulant to the odontoblasts to build up secondary dentin and to deposit lime-salts in weak parts of defective teeth and to strengthen sound teeth, at the same time that it deposits an antiseptic layer or coating of silver salts on the surfaces of the teeth and coagulates the albumin in the tubuli, thus making an impassable and insoluble barrier where it is most needed.—L. Q. BYRAM, *Dental Review*.

Oxygen-producing Tooth Powders.—The addition of calcium peroxid to a tooth powder base of ordinary composition, with a view to the disinfection of the oral cavity through the release of oxygen, has the disadvantage of being prone to produce gingival inflammation. From a therapeutic standpoint the addition of 2 per cent. of sodium perborate to a suitable base furnishes the ideal tooth powder, the perborate producing free oxygen and harmless borax.—HERMANN PRINZ, *Dental Era*.

Disinfection of the Mouth.—Fifty per cent. alcohol is not only powerfully bactericidal, but has a specific healing effect on mucous membrane of the mouth, producing an arterial fluxion under the influence of which the venous stasis of the diseased gums disappears, and they return gradually to normal. Because of smarting it is impossible to rinse effectually, but the gums being less sensitive, it can be applied by means of a soft tooth brush dipped in the alcohol.—C. ROESE, *Muench. Med. Woch.*

Prevention of Decay.—When the family history, etc., indicates teeth of weak structure, freely bathe the newly erupted teeth with forty or fifty per cent. nitrate of silver, drying it off until only pure crystals are deposited on the surface of the teeth and in the invisible defects or commencements of decay, keeping the teeth dry under the rubber-dam until this has been repeated several times. Then brush with pumice to prevent discoloration.—L. Q. BYRAM, *Dental Review*.

Sterilizing the Hands.—The hands may be rendered practically sterile by the use of permanganate of potash, or, better still, a new preparation called *Sublamin*, which is about as powerful as the corrosive sublimate, but does not irritate the hands. It dissolves well in water, can be used with soapsuds, penetrates deeper, and leaves the hands smooth. S. A. HOPKINS, *International Dental Journal*.

To Prevent Recurrent Sepsis in Root-canals.—Cleanse and sterilize canal, dip a small wisp of cotton wrapped on a suitable broach in tincture of iodine and then into finely-powdered tannic acid and introduce to the apical end of the affected canal. Absorb any excess iodine with cotton, wipe the canal with absolute alcohol, and fill with preferred material. It is the exception and not the rule for teeth so treated to give any further trouble.—D. SHEEHAN, *Dental Record*.

Oral Hygiene.—No greater service can be rendered the average man, woman or child than, at least, regular semi-annual visits to the dentist, who should remove the salivary deposits, thoroughly polish all surfaces of the teeth, treat and cure hypertrophied gums and repair all defects resulting from caries, and give instructions as to when and how to brush the teeth and gums, and prescribe a proper tooth brush and antiseptic mouth-wash.—BURTON LEE THORPE, *The Medical Brief*.

Oral Sepsis.—In a healthy mouth pathogenic organisms may meet with a peaceful end; in the diseased mouth propagation is provided for and a larger dose is prepared for entrance to the body by the lungs, the stomach or the lymphatics. * * * There seem to be two dangers which may arise in connection with a septic mouth. First, infection, sometimes by direct extension; secondly, systemic poisoning by absorption and anti-intoxication.—SIDNEY SPOKES, *The Dental Record*.

The Use of Antiseptics in Cavities.—To be perfect, a filling should be built against the clean, fresh-cut cavity wall, whether a cohesive or a non-cohesive filling. There is no objection to the use of antiseptics, but they should be used before the preparation of the cavity is complete. After the application of carbolic acid or even alcohol you cannot get the walls in condition to receive a filling except by re-trimming them.—JOSEPH HEAD, *Dental Digest*.

Sterilization of Instruments.—When it is not desirable to use boiling water, put about a teaspoonful and a half of forty per cent. formaldehyd to a pint of cold water and add about two teaspoonfuls of sodium carbonate to prevent rusting. Allow the instruments to remain in this solution at least half an hour. It thoroughly disinfects, cleans, and polishes them if they are washed off in boiling water and carefully wiped dry.—E. T. DARBY, *Dental Cosmos*.

A New Dentifrice.—The chemical and therapeutical qualities of the newly discovered peroxids of the alkali earths have been applied to the manufacture of a new dentifrice compound in which a calcium peroxid is used. In contact with the moisture of the mouth this is resolved into milk of lime, hydrogen dioxid, and water, the dioxid being in turn split up, liberating free oxygen at desired points and securing an alkaline action from the milk of lime.—*Dental Cosmos*.

Alcohol as a Disinfectant.—Recent researches seem to show that absolute alcohol is devoid of all disinfectant properties. Proof spirit (50 per cent.) gives more tangible results in this direction than either stronger or weaker solutions. Antiseptic substances, which in aqueous solution are more or less active germicides, entirely lose this property when dissolved in strong alcohol. But on the other hand corrosive sublimate, carbolic acid, lysol and thymol dissolved in a 50 per cent. solution alcohol disinfect better than aqueous solutions of the same strength.—*Medical Press and Circular*.

Rubber Tubing for Cleansing Teeth.—Instead of using rubber cup, stretch tubing over a brush mandrel, or a "barrel stone," allowing about three-sixteenths inch free end. The stretching of the rubber gives considerable pressure not obtained from the cup. Used in engine same as cup. It will spread out and follow shape of teeth, going between them as the cup will not do.—C. P. LENNOX, *Dominion Den. Jour.*

Prevention of Recurrent Decay.—To secure complete sterilization, not only of softened dentin, but of the dentin covering the pulp, (1) cleanse the cavity mechanically; (2) dehydrate with cool air, followed by alcohol of different strengths; (3) dry with hot air and apply a mixture of alcohol, xylol, geranium essence, and hydronaphthol. If a small cavity, fill immediately; if large, leave the above mixture in the cavity for twenty-four hours, covering with gutta-percha or wax. Do not permit access of saliva or moisture.—J. CHOQUET, *Journal of the British Dental Association.*

Prevention of Decay.—There is no factor so potent in the prevention of decay as cleanliness. It exerts an influence which is not only seen but felt. The one great barrier to successful dentistry to-day is the absence of cleanliness. It should be taught and talked to our patients. It should be the subject of at least one lecture in every public school during each session. Until more systematic measures are brought to bear we cannot hope to secure the best results.—GEO. C. CLEMENTS, *Transactions of the Mississippi Dental Association.*

Preventive Treatment: Nitrate of Silver.—It is safe to say that the nitrate of silver leads to the formation of secondary dentin in as far as it converts the acute with the chronic form of decay. The medicament consequently has a double action, in that it renders the decalcified dentin more or less impenetrable to acids, and also facilitates the interposition of a layer of secondary dentin as the part of the living pulp.—W. D. MILLER, *British Dental Journal.*

The Dental Toilet and the Prevention of Caries.—All the minutæ of the dental toilet, the cleansing of tooth surfaces and the mucosa of the oral cavity, are efficacious only in proportion as they eliminate bacteria and food débris, two essential factors of the carious process. The use of buccal antiseptics is a tacit recognition of the belief that some element inimical to the functional activity of caries-producing fungi may be introduced into the oral cavity and thus prevent the result which they are known to produce if permitted to develop unmolested.—E. C. KIRK, *Dental Register*.

Silver Nitrate.—Bryan of Basel has inaugurated a system of dental prophylaxis, in which he strongly advocates the application of a 40 per cent. nitrate of silver solution upon tooth surfaces slightly affected by the earlier stages of caries. With intervals of three months this process is to be repeated. He is very enthusiastic about his results, believing that the stimulating effect of the application causes the pulp to retract by depositing secondary dentin in the crown chamber.—HERMANN PRINZ, *Dental Digest*.

Sterilization of Dental Instruments.—Boil for a few minutes in a one per cent. solution of washing soda in water. If they are dried while still *hot* from the water, no moisture will remain in cracks or crevices to invite rust. The idea that boiling, as here advocated, can possibly spoil the temper of the tools, is incorrect.—R. H. M. DAWBARN, *Items of Interest*.

Lactate of Silver a Non-poisonous Antiseptic.—Lactate of silver is a white, odorless, almost tasteless powder, soluble in 15 parts of water. Its destructive action on bacteria life is four times as great as corrosive sublimate. It prevents the growth of bacteria without destroying the cellular tissue, the solution permeating the tissues layer by layer. It has no corrosive action on wounds, though in sensitive cases it causes some burning.—B. CREDÉ, in *International Dental Journal*.

Cleansing the Teeth.—After removal of all tartar, finishing one tooth before going to the next, polish the teeth with fine pumice carried on rubber wheel discs and brush wheels; draw dental fibre back and forth between the teeth to clean proximal surfaces; spray the mouth with three per cent. solution pyrozone and interest patient to use brush, floss silk and quill toothpick, and to rinse the mouth with a weak solution of sodium chlorid to allay inflammation.—F. MESSERSCHMIT, *Dental Digest*.

Treatment of Erosion.—There is nothing better than silver nitrate for touching the erosion, but to reach the cause it is especially important to apply it to the mucous glands of the gums, and particularly of the lips and cheek, and destroy them. This will not only retard the erosion, but *cure it*. For actual erosion of the front teeth substitute potassa cum calce or zinc chlorid, but touch the gum and lip mucous follicles with silver nitrate and insist upon a thorough application of milk of magnesia the last thing at night.—J. ROYSTON, *Dental Record*.

Prophylactic Treatment of the Teeth.—This includes the absolute and positive removal of the unseen but real bacterial plaques present in some situations in every untreated set of teeth, as well as the removal, at frequent intervals, of gum exudation, heretofore unsuspected and untouched, and the frequent and perfect polishing, by hand-methods, of all exposed tooth-surfaces. The feasibility of this has been fully demonstrated.—D. D. SMITH, *International Dental Journal*.

Hygiene and Dental Caries.—Whether the teeth are what is called "hard" or "soft," by proper treatment they can be saved. If we can get the mouth in a healthy condition, and if the patient will second our efforts with the proper use of the brush and floss and antiseptics, then we can fill the so-called "soft" teeth with justifiable anticipations of permanent good results, provided the cavities are properly cut and the fillings properly contoured.—LAURENCE LEONARD.

Tooth-powders.—In the use of tooth-powder the first dash with stiff brush and fresh powder should always be on the crown portion of the molars where the enamel is thick and will not be injured by the rubbing. It is well not to form the habit of always starting the work in the same quarter of the mouth, as the brush is always harder when first put into the mouth, and the first grit of the powder, always in the same place, is to the gum and teeth what the constant dripping of water is to the rock.—F. H. SKINNER, *Dental Review*.

Oral Prophylaxis.—(1) When a tooth, bad or good, hard or soft, is removed from its environments—the menstruum of the mouth—decay is at once arrested. (2) Enforced and systematic change in the environment of the teeth *in the mouth* will prevent decay. (3) This complete change of environment consists in thorough removal, at frequent and regular intervals, of all accumulations, whether solids, inspissated exudations, semi-solids, or bacterial formations, from all the exposed surfaces of the teeth, leaving them thoroughly polished.—D. D. SMITH, *International Dental Journal*.

Prophylaxis.—When we shall continually and persistently remind our patients that cleanliness in the mouth, from the cradle to the grave, is one of the great secrets and necessities in the preservation of the teeth; that plain, wholesome food is another; that the teeth require vigorous exercise like all other organs of the body, for their well-being; that the gums require brushing as well as the teeth—then, and not till then, will all begin to see the light.—FRED. H. METCALF, *Pacific Dental Gazette*.

Mouth-washes.—Do not recommend mouth-washes without knowing what they are composed of. Hydrogen dioxid is a good wash, but in some mouths it acts as an irritant; this we can control by using an equal quantity of milk of magnesia with it; this makes a very pleasant and beneficial mouth-wash.—DR. MAXFIELD, *Dental Cosmos*.

Chinosol.—Chinosol is far more antiseptic than bichlorid of mercury. A piece of gauze saturated in a ten per cent. solution will give much pleasanter results, and granulation will proceed quite as rapidly as when iodoform and other irritating agents are employed. It is especially valuable because it does not possess the irritating qualities common to the ordinary antiseptic solutions.—G. W. COOK, *Dental Digest*.

Cleansing the Mouth.—To cleanse the teeth and gums use hydrogen dioxid, applied with a ball of cotton in the pliers, and carrying a little fine powder to scrub the gums and teeth, followed with an antiseptic solution from a compressed-air atomizer, to wash out the interproximal spaces. The mouth should be thoroughly flooded, depending as much on the mechanical cleansing as on the antiseptic character of the wash.—ELGIN MAWHINNEY, *Dental Summary*.

Hand Sterilization.—Absolute alcohol has but a slight germicidal power, but the diluted fluid (seventy per cent.) has a far greater action than a watery solution of birchlorid or biniodid of mercury (1 in 1000) or a saturated solution of permanganate of potash. Prolonged use of alcohol, however, will cause pain, roughen the skin, and may produce eczema.—I. C. WEBSTER, *Cyclopedia of Practical Medicine*.

Oral Hygiene.—The continued use of many of the preparations that are vigorously pushed, or of the peroxids, will cause the enamel to grow pitted and rough; a similar use of phenol sodique, which is both antiseptic and germicidal, will stimulate the enamel to a hardening with a bright and glossy surface which we see only in cases treated by this stimulant.—LEVI C. TAYLOR, *Dental Cosmos*.

An Antiseptic Mouth-wash.—A good antiseptic mouth-wash should be, for the mucous membrane, non-caustic; for the teeth, non-decalcifying; for the entire organism, non-poisonous; and should have sufficient antiseptic action, and good taste and odor. A physiologic salt solution, of body temperature, or a two per cent. solution of bicarbonate of soda, can be recommended.—C. ROSE, *Dental Era*.

Mechanical Cleansing of the Teeth.—While mouth-washes may inhibit bacterial growth temporarily, they do not remove the mass of infection. After one per cent., or even three per cent., peroxide has been held in the mouth for from three to five minutes the viscid bacterial masses around the necks of the teeth will still be present, affording abundant supply of food for further infection.—JOSEPH HEAD, *Items of Interest*.

Tooth Desiccation.—Previous to the application of medicaments to be absorbed by the dentin, the tubuli are well dried out by successive applications of alcohol, beginning with a fifty per cent. solution, increasing the strength ten per cent. every time and drying, until absolute alcohol is used the last time. It leaves vacant every space and the dentin dried out as absolutely as can be done by the use of any preparation.—DR. WEAVER, *Dental World*.

Compressed Air in Cleaning the Teeth.—Having a tube containing about an ounce of peroxid, full strength, an air-pressure of from twenty-five to thirty pounds will so divide the solution, sending it into every nook and corner, that stains and debris that it would otherwise take half an hour to remove will melt away as by magic.—W. H. POWELL, *Dental Cosmos*.

Medicated Dentifrices.—When teeth and gums are in a comparatively normal state it is unwise to recommend the daily or weekly use of medicated dentifrices. Too much treatment often proves injurious.—B. F. ARRINGTON, *Dental Office and Laboratory*.

Cleansing the Teeth.—When a person is in health, and the mouth in a normal condition, a soft brush and plenty of water is all that is needed for cleansing the teeth. But when the patient is sick the condition of the mouth is abnormal, and treatment to suit the individual case should be carried out under the eye of a competent dentist or physician.—J. SEAL, *Dental Cosmos*.

Instrument Sterilization.—Keep the instruments which have been used separate from the clean ones, thus avoiding the necessity of sterilizing all the instruments. For excavators a deep, narrow bowl containing a soap solution with about two per cent. formaldehyd. After brushing with stiff brush in soap and water, place in the formaldehyd solution for a few minutes, or as long as possible, and wipe off with a towel that has been boiled.—C. B. COLSON, *Dental World*.

The Tooth-brush.—Have always in use four extra-hard tooth-brushes, to be used alternately, because the employment of one brush only means its rapid softening, by becoming water-soaked, defeating the object we aim to accomplish. Use at bedtime, and in the morning after rising, thoroughly for four minutes at each cleaning.—J. W. WASSALL, *Dental Cosmos*.

An Effective Dentifrice.—Add one-half drachm bicarbonate of soda to a three-ounce bottle of listerin. Sponginess of the gums, ulcerations, canker, etc., are speedily cured by the systematic use of this combination. It neutralizes acid conditions, stops fermentation and putrefaction, and tones up weak tissues.—J. J. LAWRENCE, *Medical Brief*.

Hygiene of the Mouth.—Make it a special point that the gingival tissues covering the roots of the teeth to the entire limits of the alveolar processes, both internally and externally, rather than the teeth, must receive brush-friction. If this portion of the mouth is brushed the teeth themselves will receive their ample share.—J. W. WASSALL, *Dental Review*.

Steam Sterilization of Instruments.—The temper of instruments is not affected by steam sterilization. Carbonate of soda minimizes the danger of rust, though very rapid evaporation of moisture occurs on heated steel. A sterilized gritty elastic rubber eraser does the shining.—J. J. SARRAZIN, *American Dental Journal*.

Cleansing and Polishing the Teeth.—After the use of scalers for the removal of all solid deposits and mucous concretions, the teeth should be thoroughly polished on *all* exposed surfaces. This is best done with orange-wood sticks charged with powdered pumice, carried to position by means of a porte-polisher, the friction applied by hand. This seems to stimulate the vital forces of the tooth to increased activity in the removal of waste and the deposit of new and better material.—D. D. SMITH, *International Dental Journal*.

Action of Formaldehyd on Soft Tissues—Antidote.—If discovered immediately apply a little weak water of ammonia, followed by a 10 per cent. sol. trichloracetic acid. If patient returns with slough, cleanse with 3 per cent. pyrozone; apply campho-phenique to relieve pain; dry surface and coat several times with comp. tinct. benzoin.—A. C. HART, *Pacific M. D. Gazette*.

Mentho-phenol Mouth Wash.—Melt together one part phenol crystals and three parts menthol crystals. Soluble in alcohol, ether, chloroform, or the essential oils. A three per cent. aqueous solution makes a good mouth wash for infections or ulcerative affections of the mouth.—WILLIAM SCHAEFFER, *Medical Journal*.

Formalin an Ideal Antiseptic and Disinfectant.—With the facts before us, we feel that at last an ideal antiseptic and disinfectant has been found, in the use of formalin in place of heat, steam, carbolic acid, and bichlorid of mercury, in all places where complete disinfection is desired.—CARROLL O. SOUTHARD, *Sou. Pacific Med. Jour.*

Cleansing the Teeth.—The teeth ought to be cleaned after each meal, by any proceeding which will do it the most effectually. As a rule, disinfectant mouth-washes are preferable to powders, as they keep the mouth sterile and prevent decay. The teeth need exercise too.—A. W. HARLAN, *Dental Register*.

Dentifrices.—While the gums are in a healthy condition there is no need of medicine, and we should not prescribe for a pathological condition of the mouth until the necessity arises. When there is an abnormal condition, it requires professional treatment.—A. J. WOLFERT, *Ohio Dental Journal*.

Mouth Washes.—It has always seemed to me an unwise thing to advise the use of stimulating washes daily; any member that is over-stimulated becomes abnormal. Asepsis of the mouth would be much better attained by use of the brush and mechanical cleansing than by the use of antiseptics.—MARY V. HARTZELL, *Dental Review*.

Buccal Antiseptics.—The application of buccal antiseptics is defective, in that their action is temporary, while the persistence of bacterial influence is a constant factor, which must produce its results when combated only by the necessarily intermittent use of local hygienic and antiseptic means; the degree of success of the latter being relative only to its persistency.—E. C. KIRK, *Dental Headlight*.

For Cleaning the Teeth.—The addition of a small portion of Euthymol tooth paste to pumice stone for cleansing teeth at the dental chair offers a valuable adjunct to treatment. It imparts an agreeable flavor, is cooling and stimulating to the mucous membrane, prevents the pumice stone from being thrown about, and is gratefully received by the patient.—GOODMAN A. MILLER, D.D.S., Chicago, Ill.

A Prophylactic Mouth-wash.—Peroxid of hydrogen oxidizes the organic deposits about the teeth, loosens up the secretions about the gums, and sets free germs that are inaccessible to the action of carbolic acid or bichlorid of mercury. After the germs are thus set free, the latter solutions will bring about a most desirable state of asepsis.—G. V. I. BROWN, *Ohio Dental Journal*.

Immune to Caries.—The mouths which become immune to decay are chiefly those which are used vigorously, and

the worst mouths we have to deal with are the ones in which the food is simply patted about and then swallowed. The importance of training patients to use their teeth cannot be too strictly emphasized.—FRED B. NOYES, *Dental Review*.

Formaldehyd.—Prof. Ernest thinks that if instruments having no grooves are washed clean in a 1-100 solution, and put in a case in which is kept a piece of cotton saturated with the formalin, it is abundantly sufficient to destroy all the germs on them. It being so easily used I think it is a very valuable thing.—THOS. FILLIBROWN, *International Dental Journal*.

Sterilizing a Cavity.—Recently I have been using Dr. M. L. Rhein's solution: $1\frac{3}{4}$ grains of bichlorid of mercury dissolved in two ounces of peroxid of hydrogen, making approximately a 1-500 solution. This will afford a nearly chemical sterilization of the dentin.—J. P. BUCKLEY, *Dental Digest*.

A Substitute for the Engine-brush or Rubber-cups for Cleaning the Teeth.—A bit of rubber tubing slipped over a mandrel made with a shoulder to prevent the tubing from going on too far, carries polishing satisfactorily, and costs next to nothing.—DR. MCNAUGHTON, *International Dental Journal*.

Disinfection of Instruments.—As the result of a series of experiments in which the essential oils, carbolic acid, creosote, bichlorid of mercury, hydronaphthol, etc., were used in the tests, I recommend sublamin, 1 in 200, for steel instruments, and chinisol, ten per cent., for other metals.—ELGIN MAWHINNEY, *Dental Summary*.

For the Hands.—While the hands are still wet after washing, before and after dental operation, if a few drops of campho-phénique are dropped into the palms and rubbed over, you will get the comfort of an antiseptic and deodorant, leaving the hands soft and clean.—J. D. REYNOLDS, *Dental World*.

Tooth-powders.—It is not possible by the use of tooth-powder even three times a day to keep the mouth entirely alkaline or neutral so that we must end by regarding tooth-powders, even the best of them, as agents for removing stains from the teeth merely for æsthetic reasons.—STANLEY READ, *Dental Record*.

The Sterilization of Dentures.—Sulphurous acid will absolutely deodorize and disinfect a denture and not merely cover the odor of a plate that has been worn in the mouth. Put a few drops in a little water and put the case in this at night. Cleanse with soap and brush in the morning.—I. KENNERLY RIDLEY, *Journal British Dental Association*.

The Teeth of Young Children.—A great deal of satisfaction comes from the use of an agent similar to nitrate of silver; that is, the chlorid of gold, and if any who favors the use of nitrate of silver will try the chlorid of gold he will have no further use for the nitrate of silver.—W. V. B. AMES, *Dental Review*.

A Germicidal Dentifrice.—Use a dentifrice in which hydronaphthol and oil of cassia are the principal germicides. With patients who use this freely and faithfully the results have often been astonishing. Decay has in many instances been almost entirely arrested.—J. LEON WILLIAMS, *Items of Interest*.

Cleansing the Mouth.—Cakes of magnesia saturated with pyrozone, 3 per cent., form excellent cleansers for the mouth, night and morning use, and are particularly well-adapted to control the irritating effects of acid mucous upon the cervical margins of the teeth.—J. F. P. HODSON, *Dental Cosmos*.

Sterilizing Cutting Instruments.—Immersion in a solution of five parts camphor-phenol in 95 per cent. alcohol affords the safest method of sterilizing cutting instruments, having least effect in dulling the edges of instruments which would be ruined by the ordinary process of boiling.—S. P. BARBOZA, *Chem. Med. Record*.

An Antiseptic Mouth Wash.—As the result of numerous tests and chemical analyses it is found that sanitol is antiseptic in the proportion of 1 to 38 parts. It is neutral in reaction, and contains no mineral acids or other ingredients that might prove baneful to the soft tissues. Its therapeutic action is that of a mild stimulant.—A. H. PECK, *Dental Digest*.

Formaldehyd as a Disinfectant for Instruments.—Infected dental instruments can be disinfected, without injury, in a closed space of less than one cubic foot, by an exposure of fifteen minutes to formaldehyd gas, generated from a pastel containing five grains of paraform, by heating the pastel over a proper alcohol lamp.—ELMER G. HORTON, *Dental Cosmos*.

Oral Hygiene: Phenol Sodique.—Phenol sodique as a daily mouth-wash prevents fermentation of food debris and keeps the buccal cavity in a cleanly and aseptic condition; as a local application to the pus pockets in pyorrhea it gives most satisfactory returns; in hemorrhage after extraction it can be relied upon to answer every purpose.—*The Dental Era*.

Cleaning the Teeth.—In many cases taffeta ribbon will be found very useful. It is a very thin ribbon without any extra thickness at the selvage, called lutestring or taffeta ribbon. It is not very strong and in many places tears, but when it does go in, and with tooth-powder, it does its work quickly and well.—HARRY F. HAMILTON, *International Dental Journal*.

Brushing the Gums.—If the gums are well brushed, the teeth will take care of themselves. The brush may cause bleeding and develop sore spots on the mucous membrane for a few days, but a persistent brushing of the tender or bleeding places will soon harden and cure them.—J. W. WASSALL, *Dental Review*.

Chloretone; Strength of Solutions.—An aqueous solution of 0.8 to 1 per cent. of chloretone has approximately the same anæsthetic effect as a 2 per cent. solution of cocain. The solutions keep indefinitely; it is not even necessary to use boiled water to make a sterile solution. It is itself a powerful antiseptic and destroys germs.—*Therapeutic Notes.*

Ethyl Chlorid for Sensitive Dentin.—Place quite a large piece of cotton loosely in the cavity and apply and remove, alternately, the stream of ethyl chlorid to the cotton for two or three seconds. This secures painless excavation except in the posterior teeth.—GEO. S. ALLAN, *International Dental Journal.*

Acetanilid as a Mouth-wash.—One and a half drachms of acetanilid to an ounce of alcohol, made agreeable, as well as having its antiseptic properties increased by the addition of one or more of the essential oils, makes a mouth-wash that gives very satisfactory results.—M. E. LE GALLEY, *Ohio Dental Journal.*

Formaldehyd.—In cases where the crown portion of the pulp is dead but that in the roots highly sensitive, forty per cent. formaldehyd with a little cocain added will often bring about most happy results. In cases of the most aggravated toothache the pain will be overcome in a very few minutes.—E. H. EWALD, *Dental Summary.*

Disinfection of the Clinical Thermometer.—A few drops of formalin on a wad of cotton placed in the end of the thermometer case is advocated by F. P. Denny as an efficient disinfectant. The convenience and efficacy of this method should insure its general use.—*Boston Medical and Surgical Journal.*

Septic Infection.—In cases of septic infection quinin bisulphate, grs. iv. to viii., every two hours, and calcium sulphate, gr. $\frac{1}{16}$, every ten minutes until ten doses have been taken, will generally arrest the poison. The quinin may be discontinued after the second or third dose. Give a saline cathartic also.—*Dental Review.*

Argonin.—This comparatively new silver preparation is highly antiseptic, and exerts a positive and decided effect on suppurative process. It is readily soluble in warm water, non-irritating, and forms no slough on contact with mucous membrane.—C. H. BLACKBURN, *Items of Interest*.

Sterilization of Aluminum Instruments: Caution.—The ordinary washing soda solution (sodium carbonate) in which instruments are boiled will entirely ruin aluminum, and hence should not be used for sterilizing them.—*International Journal of Surgery*.

Sterilization of Cutting Instruments.—Knives can be safely sterilized by chemical and mechanical means without the use of heat in any form. Immersion in 95 per cent. alcohol has *the least*, and boiling *the most*, effect in dulling the edge of a knife—H. A. ROGSTER, *Western Dental Journal*.

Recurring Caries.—As a preventive of recurring caries, due to fracture of enamel prisms at cavity margins, some form of cement or varnish should be used. After the edges are protected, Canada balsam in xylol is a useful material for this purpose.—K. GOADBY, *Journal of the British Dental Association*.

Oral Hygiene.—Collections on the teeth are an irritant to the gums, causing them to bleed easily. If they bleed, brush the harder and the deposits will be removed and the gums will become more firm and healthy. Brush away from the gums on to the teeth, not across the teeth. Great benefit to the gums is derived from friction if not too severe.—V. H. JACKSON, *Dental Cosmos*.

Sterilization of Dentin.—(1) Mechanical cleansing; (2) dehydration by cool air, adding the energetic action of alcohol of different strengths; (3) dry with hot air, substituting a mixture of alcohol, xylol, geranium essence, and hydronaphthol for the pure alcohol. Fill at once, or after twenty-four or forty-eight hours.—J. CHOQUET, *Journal of the British Dental Association*.

Repairing an Old Gold Filling.—When it is desired to repair a gold filling with gold, clean the tooth with lukewarm water, wash it with sulphuric ether, go over the filling with alcohol, and dry with warm air. Unroll a gold cylinder to one thickness, or take foil No. 4, and anneal carefully; apply and go over the entire surface with a very fine-pointed plugger, first with hand-pressure, then mallet it well; then go over it with a convex plugger, applying force at a direct right angle to the surface worked upon. When two layers have been applied in this manner you can go ahead as usual.—X. DODEL.

Oral Antisepsis.—In relation to the whole group of internal conditions caused by pyogenic organisms there is a wide field of preventive medicine open by the exercise of oral antisepsis; a field that can be worked in, with the most surprisingly satisfactory results, alike by the physician, surgeon, dental surgeon, and patient.—WM. HUNTER, *British Medical Journal*.

Tooth Extraction: Sterilization.—No thoughtful operator will permit himself to seize upon a tooth until first it has been bathed, nay, cleaned, with a swab most vigorously all about the gingival border of the gum surrounding it, and this with the most concentrated antiseptic that the tissues of the oral cavity can tolerate.—FRANK W. LOW, *Dental Cosmos*.

Tooth Polishing.—As a polisher the tooth brush is utterly inadequate because, even with the use of a good powder it fails to entirely remove the adhesive deposits which are so prevalent and so mischievous to the teeth, and there are too many places inaccessible to the brush. The patient must rely on the stick.—CHAS. B. ROHLAND, *Dental Review*.

Disinfection of Instruments.—I have been using a 2 per cent. solution formalin as an antiseptic for my instruments for the last three months, and like it very much. It does not blacken or corrode them.—A. S. ESCHLEMAN, *Dental Cosmos*.

Oral Hygiene.—The placing of the teeth and adjacent parts in a perfectly clean and healthy condition requires more real skill and practical knowledge than the placing in of a filling. It means not only an expert ability in the use of instruments, but a quite thorough knowledge of special pathology and therapeutics, and can only be acquired by long months, and it may be years, of learning.—*International Dental Journal*.

Asepsis: Antisepsis.—The spirit of the times points to a practice of asepsis, rather than antisepsis; avoiding infection rather than disinfecting; preventing disease rather than treating it. Any remedy, therefore, whether old or new, that will accomplish the above purpose, is ideal.—E. T. LOEFFLER, *The Dentists' Magazine*.

Absolute Alcohol as a Disinfectant.—From experiments conducted in the Johns Hopkins hospital, it appears that Squibb's absolute alcohol is a valuable disinfectant for instruments liable to infection under the conditions which ordinarily surround us. It is the best substitute for heat, which, both moist and dry, dulls the edge of cutting instruments.—*Dental Register*.

Sterilizing the Forceps.—The forceps, including the handles, are boiled in a solution of common washing soda, about a quart of water to a piece of soda the size of a walnut, and there is no rust. A mixture of vaselin and carbolic acid is rubbed on the joints while they are hot, which keeps them as good as new.—F. E. GARNER, *British Dental Journal*.

Brushing the Teeth.—It is remarkable how difficult it is for some people to learn the proper method of brushing the teeth and gums; they can frequently be materially aided by instructing them to do the work in front of a mirror, so that they may see for themselves that it is properly performed.—M. L. RHEIN, *Dental Era*.

Formalin Gelatin.—This is a firm resistant, stony-hard, transparent substance, which, when enclosed within the system, gradually dissolves, giving up its formalin, thus setting up a continued state of asepsis in its neighborhood, being finally replaced by connective tissue. When heated, it can be molded to any form. Impregnated with lime-salts, it has proved itself capable of replacing pieces of bone removed in course of resection.—DR. SCHLEICH, in *Therapeutische Monatschrift*.

Mouth Sterilization.—While it is undoubtedly true that it is practically impossible to sterilize the mouth, it is also true that the mouth bacteria may be so thoroughly subjugated in a few minutes as to result in great practical benefit to the patient undergoing operations in the mouth.—H. W. GILLET, *International Dental Journal*.

Silver Nitrate and Cement Fillings.—A filling of oxy-phosphate of zinc, placed upon a surface treated with nitrate of silver, will last a great deal longer, and be a great deal better mass than the same mass not having the peculiar effect it gets from this film of silver albuminate.—W. V. B. AMES, *Dental Review*.

Oral Hygiene.—The chief instruction the public need is *how, when, and where* to clean their teeth, and it cannot be too strongly impressed on them that their first line of defence against caries and oral sepsis is a stiff tooth-brush systematically and effectively used.—WILLIAM HERN, *British Dental Journal*.

Clean Hands.—When washing the hands, before and after dental operations, if a few drops of campho-phénique are dropped in the palm of the hand while wet, and rubbed over the hands, you get the benefit of an antiseptic and deodorant, leaving the hands soft and clean.—J. D. REYNOLDS, *Dental World*.

To Clean Burs.—Half fill a small glass vessel with a saturated solution of washing-soda, into which drop the burs after using. Soak for an hour or two and remove *débris* with a suitable brush.—*Journal of the British Dental Association*.

Oral Hygiene.—To prevent fermentation of food *debris* and to keep the buccal cavity in a cleanly and aseptic condition, prescribe phenol sodique as a daily mouth wash. It also gives most satisfactory returns as a local application to pus pockets in pyorrhea treatment.—*The Dental Era*.

An Antiseptic Mouth Lamp.—The lamp consists of an electric mouth lamp surrounded by a glass tube; it can be easily taken apart and cleansed. The double glass also has the advantage of taking up the heat from the lamp.—S. FREEMAN, *International Dental Journal*.

Sterilizing Dental Instruments.—Make a saturated solution of borax in a twenty per cent. solution of formalin. This is practically instantaneous in its action as a germicide and instruments may be left for weeks in it without rusting.—J. LEON WILLIAMS, *Dental Office and Laboratory*.

Crede Silver Salts.—Lactate of silver immediately destroys all bacterial life in putrescent pulps, and puts the canals of dead teeth into perfectly antiseptic condition. I use it in canals in powder; for injections, in solution.—CHAS. A. NASH, *Items of Interest*.

Oral Hygiene.—No labor performed for a patient is more valuable nor worth a greater price than the time given to properly impressing and teaching in every detail the routine of ordinary oral hygiene.—M. L. RHEIN, *Items of Interest*.

Hypodermic Needle Sterilization.—Place pure alcohol in hypodermic needle, then pass the needle through an alcohol flame. The alcohol in needle will burn, causing the needle to become aseptic and dry.—A. W. GRUEBBEL, *Dental Brief*.

Sterilization of Cavities.—In the sterilization of cavities, preparatory to filling, phenol sodique is unsurpassed. It does not injure the dentin, and being employed undiluted is prompt in action and always ready for immediate use.—*Dental Brief*.

Clean Teeth.—Keeping the teeth perfectly clean prevents decay; preventing decay prevents the necessity of fillings; preventing painful fillings makes extracting needless; with no extractions there is no necessity for plates or bridges.—LUCIAN H. ARNOLD, *Dental Review*.

Clean Teeth Never Decay.—Smooth and polished enamel surface is nearly immune to the action of bacteria, because the starchy food and bacteria plaques cannot become adherent to a polished surface, which is readily kept clean by the tongue and cheeks.—A. C. HART, *Items of Interest*.

Prevention of Decay in Children's Teeth.—Absolute cleanliness and mild, pleasant antiseptics are almost specific against decay. Formaldehyd and silver nitrate, when properly applied, will arrest decay and obviate the filling of deciduous teeth.—CLARK R. ROWLEY, *Dental Register*.

Instrument Sterilization.—The ordinary washing soda solution in which instruments are boiled will absolutely ruin aluminum and hence it should not be used for sterilizing anything made of aluminum.—*International Journal of Surgery*.

Removal of Green Stain.—Apply iodine to the stained surface, followed by weak aqua ammonia, repeating until the stain disappears. Recurrence will be proportioned to the subsequent care given the teeth.—S. B. PALMER, *Ohio Den. Jour*.

Oral Hygiene.—As an especially effective wash to decrease the ravages of caries, mercuric chlorid in the strength of one to twenty-five hundred forms a valuable constituent of the prophylactic dentist's armamentarium.—GEO. E. HUNT, *Dental Digest*.

Treatment of General Septicemia.—The treatment of general septicemia is by hypodermic injections of creosote. The creosote is mixed with equal parts of camphorated oil, and 20 minims of the solution are injected three times a day.—*Dental Brief*.

Antiseptic Mouth Wash.—Sanitol is an effective antiseptic and deodorant, both as a mouth wash and for cleansing the teeth. It is especially efficient in hardening the gums, when they bleed readily when brushing the teeth.—C. LINDSLEY.

Antiseptic Mouth-wash.—In case of abscess with necrosis of maxilla, use as mouth-wash a one-per-cent solution of chloral, to which a few drops of essence of peppermint have been added.—*Bulletin Medical*.

To Sterilize Stones.—Brush the stones, whether grinding or polishing stones, clean with a brush and soap and water, then dip in a five per cent. solution of formalin in alcohol.—*Tri-State Dental Record*.

A Deodorizer.—In case of disagreeable odors in the operating room, burn oil of cassia, on a whisk of cotton, over the alcohol lamp.—J. A. CHAPPLE, *Am. Den. Weekly*.

Instrument Sterilization.—Instruments kept immersed in a twenty per cent. solution of formalin, with borax to excess, will not oxidize and asepsis will be maintained.—A. H. MERRITT, *Dental Era*.

Sterilization of Cutting Instruments.—Immersion in 95 per cent. alcohol has the least effect in dulling the edge of a knife; boiling has the most effect.—*Western Dental Journal*.

A Clean Aseptic Dressing.—Dip a piece of cotton in an alcoholic solution of boric acid; burn the alcohol out.—DR. HUGENSCHMIDT, *Dental Cosmos*.

An Astringent Mouth-wash.—One ounce of Listerine will take up one ounce of tannic acid, making a very strong astringent mouth-wash.—DR. GRADY, *Dental Cosmos*.

Sterilizing Instruments.—Boil them for five minutes in a one per cent. solution of carbonate of soda. This not only renders them aseptic but preserves them from oxidation.—WM. ERNEST WALKER, *S. Br. Ntl. Den. Asso.*

A Pleasant Antiseptic.—Add a teaspoonful of pasteurine to the water used for syringing out cavities. It is pleasant to the patient, and has excellent antiseptic properties.—J. A. CHAPPLE, *Am. Den. Weekly.*

The Disinfection of Instruments.—Our only sure dependence is heat—say 160° C. (320° F.) for ten minutes. Within this limit their temper *and ours* will be safe.—GARRETT NEWKIRK, *Dental Review.*

Mouth Washes.—I think the chief value of the preparations we have been advocating as antiseptic mouth washes is in *persuading agents* to induce our patients to keep their mouths clean.—H. B. TILESTON, *Dental Summary.*

Soap as an Antiseptic.—As the result of a series of investigations, Prof. Rodet concludes that common soap, apart from its value as a cleansing agent, is an antiseptic not to be disregarded.—*Revue de Stomatologie.*

Sterilizing Instruments.—Dipping in alcohol and burning off the alcohol effectually destroys all virus or germs. The heat reaches the whole surface of the instrument.—FANEUIL D. WEISSE, *Dental Cosmos.*

Prophylaxis.—Pits and grooves, showing interruption of development of the enamel, when ground out and polished are easier to clean, and beautifies the teeth.—A. C. HART, *Items of Interest.*

Polishing Proximal Surfaces.—Pulverized pumice stone and full-strength dioxogen, using rubber bands as carriers, may be used effectively for cleaning and polishing proximal surfaces difficult of access otherwise.—W. A. MILLS, *Dental Cosmos.*

Bad Breath.—To remove offensive odors from the breath there is nothing better than one part dioxygen in five parts rosewater.—E. J. KEMPF, *Indiana Medical Journal*.

Neutral Liquid Dentifrice.—Oil of cinnamon, 1; oil of clove, 1; oil of peppermint, 6; thymol, 1; saccharin, 1; alcohol (ninety per cent.), 400; tincture of rhatany, 10.—*Bull. gén. de Thérap.*

Borate of Cassia.—In cases of extensive pus formation, borate of cassia is a cleansing preparation and a good germicide for use before the application of peroxid of hydrogen.—DR. PRUYN.

After Extraction.—Phenol sodique gives almost magic relief from the sickening after-pains and soreness following extraction. It also controls hemorrhage and promotes healing and hardening of the gums.

The Best Germicide.—The best germicide is the flame. Dip small points in alcohol and ignite. As soon as the alcohol is burnt off all bacteria will be killed.—*Western Dental Journal*.

An Efficient Deodorizer.—If an old crown, piece of bridgework, or any similar piece of repair work is dipped into electrozone, the offensive odor is instantaneously destroyed.—A. H. PECK, *Dental Review*.

Urotropin.—Aminoform, or urotropin, a combination of ammonia and formaldehyde gas, is a very valuable antiseptic.—E. T. LEFFLER, *The Dentists' Magazine*.

Sterilizing Cavities.—Cavities of decay can be thoroughly sterilized, previous to the insertion of filling, with caustic pyrozone.—*Dental News*.

Sterilizing Mouth Mirrors.—Place the mirrors in alcohol until needed for use. Then wash in clean water and dry with a sterile napkin.—E. M. KAPTAN, *Dental Review*.

Sterilizing the Syringe.—Use a glass syringe which has a plunger made of asbestos, which can be sterilized by heating.—R. OTTOLENGUI, *Items of Interest*.

Fetid Breath.—When fetid breath is due to disease of the stomach the following will be found of great benefit:

℞. Carbo ligni
Pepsin sacchar.ãã 3 ii
Hydrarg. chlorid. mitegr. vi. M.
Divide in capsules No. 24.

Sig.—One capsule three times a day, two hours after meals.

Two teaspoonfuls of glycothymolin in a little water, or Seiler's solution in equal parts water, twice a day, will also be of benefit.—J. R. MEGRAW, *Dental Digest*.

Mercuric Chlorid Mouth-wash.—

℞. Mercuric chlorid 0.4 gm.
Thymol 0.1 gm.
Menthol0.33 gm.
Oil eucalyptus 0.1 gm.
Glycerin 50 gms.
Alcohol 50 gms.
Aq. gaultheriaq. s. ad 1000 gms.

This combination overcomes the disagreeable metallic taste and gives a pleasant and refreshing mouth-wash. Fifteen Cc. of this solution contains only 1-11 gr. HgCl_2 , so that if accidentally swallowed it would do no injury, while when used as a wash the amount absorbed would be so small as to be harmless.—C. R. JACKSON, *Dental Summary*.

Saccharin Mouthwash.—(For infectious gingivitis.)—
G. G. CUMSTON, *International Den. Jour.*

℞. Saccharine,
Natrii bicarbãã 1 part.
Acid salicylat 4 parts.
Alcoholis 150 parts.
Aq. menth. pip 50 parts. M.

Half teaspoonful to a glass of tepid water as a mouth-wash.

Mouth Wash after Removal of Calculus.—Use a hot boracic acid solution, about 1 to 600.—*Dental Review.*

Antiseptic Paste.—

℞. Cocain hydrochlorate,
Thymolãã gr. 15

Mix thoroughly and add
Formaldehydgtt. 10
Oxid of zincgr. 30

Make a paste.

Keep in ground-glass covered bottle, oiling the joint both to exclude air and to keep the paste from cementing cover to bottle. This paste hardens to the consistency of half-dried putty, and is non-absorbent.—J. H. BEEBEE, *Dental Digest.*

Sterilizing Instruments.—The coating which sometimes forms on instruments when boiling may be removed with the following solution :

Prepared chalk 2 oz.
Ammonia 2 oz.
Alcohol 2 oz.
Water 4 oz.

Rub the instruments with cloth saturated with the solution, then wipe them with a dry cloth.—J. Q. BYRAM, *Dental Review.*

Mouth Wash for Fetid Breath.—

℞. Borate of sodium..... 15 grs.
Alcohol ½ drachm.
Water 1 pint.
Thymol 7 grs.

—*Ohio Dental Journal.*

Tonic and Antiseptic Mouth Wash.—

℞. Thymol 7 grs.
Borax 15 grs.
Water 1½ oz.

—P. J. DAVID, *Medical News.*

Antiseptic Mouth-wash.—Among the many new articles added to the U. S. Pharmacopeia (eighth edition) is an antiseptic mouth-wash, "Liquor Antisepticus," containing 2 per cent. boric acid, 0.1 per cent. each benzoic acid and thymol, 25 per cent. alcohol and other antiseptics and aromatics. In prescribing, write the official title:

R. *Liquoris antiseptici*f3xij
Sig.—Use as mouth-wash.

—J. P. BUCKLEY, *Dentists' Magazine*.

Formol for Surgical Antisepsis.—The disagreeable odor of formol is disguised if prepared as follows:

R. Alco. sol. formol 40 per cent. 25 grams.
Tinc. Eucalyptus 5 grams.
Ethyl Alcohol, q. s. to make200 c.c.

Each teaspoonful contains 25 centigrams of formic alcohol. Add one to four teaspoonfuls to a liter of water.
—*Semaine Medicale*.

Antiseptic Mouth-wash (Miller).—

R. Thymic acid, 25 centigrammes ($3\frac{1}{4}$ grains);
Benzoic acid, 3 grammes (45 grains);
Essence of peppermint, 75 centigrammes (10 minims);
Tincture of eucalyptus, 15 grammes ($4\frac{1}{2}$ drachms);
Alcohol, 100 grammes (3 ounces).
M. Put sufficient in a glass of water to render latter milky.

Mouth-wash for Fetid Breath.—

R. Tinct. myrrh ʒ ij
Kennedy's dark pinus—Canadensis ʒ i
Sod'i borates grs. xij
Listerin (Lambert's) ʒ iij
Aqua dist ʒ ij

Use as mouth-wash three times daily.—*Med. Brief*.

CHAPTER VII

ORAL SURGERY—ANTRAL AFFECTIONS— ALVEOLAR ABSCESS—EXTRACT- ING, ETC.

Extracting and Replanting for Cure of Abscess.—Having extracted the tooth, give it an immediate bath of peroxid of hydrogen. With a stone remove all necrosed bone, cutting the end off flat; if necessary, one-eighth of an inch will do no harm. Wash the socket with tepid water and place absorbent cotton with eucain, as far up as it will go without pain. Open the root-canal clear through and fill with cement, except the apical end, which fill with gutta-percha. If it is a superior incisor grind down the lingual surface quite appreciably, so that the antagonizing teeth will not strike. Chisel cavity back to solid walls and fill with cement. When set immerse in carbolic solution. Remove eucain cotton from socket and renew with dry cotton on top, using gentle but increasing pressure. Remove, set the tooth to exact position and shove to place with a sharp plunge. Ligate to adjoining teeth well up to the necks to insure upward pressure. Later replace cement with gold.—W. D. COWAN, *Dominion Dental Journal*.

Opening Acute Alveolar Abscesses.—When an alveolar abscess is to be opened and the patient cannot stand the pain of the operation it is best to have recourse to the use of nitrous oxid. It is quite unnecessary in such cases to resort to ether or chloroform, and it is inadvisable for obvious reasons to employ cocain or the chlorid of ethyl. When no anæsthetic is used the operator is apt to improv-

erly perform the work on account of the anxiety of the patient; he may fail to reach the pus or may make an opening too small to adequately drain the abscess. Ofttimes the most painful period of an acute apical abscess occurs prior to its perforation of the alveolus. This is the time when under nitrous oxid the penetration of the abscess by means of a spear-pointed drill going through the gum and external alveolus averts a more extensive involvement of both the soft and hard tissues and relieves the patient almost immediately.—M. I. SCHAMBERG, *Dental Brief*.

Chronic Alveolar Abscess.—If an abscess fails to heal readily from treatment through root-canal, fill the canal, make a generous opening, and pack the pocket with cotton saturated with cocain, placing loose cotton around the opening to absorb any cocain exuding. After about five minutes remove the cotton and curette the pocket thoroughly, scraping all rough or dead bone, rather taking more than necessary than not enough, and flooding with cassia water while scraping, to keep it clean and allow of seeing what is being done.—ELGIN MAWHINNEY, *Dental Review*.

Drainage of Abscesses.—There is no place in the human body where care in securing beyond question the complete drainage of abscesses is so important as in the mucous tissues of the mouth. The blood supply is so rich in this region that cuts close in a surprisingly short time and the formation of pus is often profuse and rapid. Hence we must insist upon the necessity of keeping up the drainage for a sufficient time for the complete cleaning of the abscess. In all cases of the drainage of abscesses in the membranes of the mouth use a 95 per cent. carbolic acid in the tent. A very small amount retained in the gauze or cotton is sufficient to cauterize the lips of the incision, making the opening freer, promoting the egress of pus and presenting a barrier to the ingress of new infective material.—G. V. BLACK, *Northwestern Dental Journal*.

Surgical Treatment of Alveolar and Pericemental Abscesses.—Pus left to itself will do more harm than the knife of the surgeon judiciously used. After cleansing and filling the root-canals, with a small, sharp, clean knife expose the bone, gaining free access, and amputate the denuded end of the root smooth with the side of the cavity, and curette all diseased tissue, no matter how far it extends. Syringe out the cavity with hot water and some mild antiseptic, not escharotic, in order to preserve the fresh blood-clot, which will form new tissue in less time than to have it fill in from the sides. By relief of tension, destruction of diseased tissue, and changing a chronic into a fresh wound, success is insured.—R. B. ADAIR, *Dental World*.

Treatment of Alveolar Abscess.—First anæsthetize the part or patient; next antisepticize the parts; then raise a periosteal flap from the external alveolar plate, the bone being exposed. Then, with a clean bur of sufficient size ($\frac{1}{8}$ to $\frac{1}{4}$ inch in diameter) in the surgical engine, drill directly into the alveolar abscess and completely remove its contents, all of the accumulated *debris* and the necrotic extremity of the root should that be the condition. Sterilize the pulp canals and fill. Pack the abscess cavity with iodoform gauze or other dressing, leaving the opening through the external alveolar plate lightly covered by the pendant fold formed by the periosteal flap.—H. C. BOENNING, *International Dental Journal*.

Camphoroxol in the Treatment of Chronic Alveolar Abscess.—The design being to deodorize and disinfect and to oxidize and destroy degenerate tissue, the chemical changes in the compound incident to oxidation free the camphor and leave it within the diseased area as a preventive of re-infection. The action upon necrosed tissue is prompt and satisfactory, and we have in this combination—peroxid of hydrogen three per cent. combined with camphor, using a fifty per cent. solution in warm water—a valuable medication for local use.—L. L. DUNBAR, *Pacific Dental Gazette*.

Sponge-grafting for Roots Absorbed, Perforated, or Incompletely Developed.—Bits of the finest Turkey sponge, perfectly free from sand and thoroughly washed, are sterilized in phenate of soda and kept ready for use in sealed glass tubes. A small portion sufficiently large to fill the extremity of the absorbed root, and sufficiently small, on pressure, to be passed through the apical opening of the canal, is passed through, the root having been first made aseptic. The fibrous tissue of the human economy unites with the fibres of the sponge and forms a graft, which completely fills the space due to absorption and arrests its further progress.—G. BRUNTON, *British Dental Journal*.

A New Method of Closing Incised Wounds.—Cleanse the wound and dry thoroughly. Apply a piece of adhesive plaster on either side of the wound, of size to give ample area for adhesion, and not nearer the edge of the wound than one-quarter of an inch. Insert interrupted sutures through the edge of the plaster, draw together, and tie. This coaptates the edges of the wound better than stitches through the skin and avoids that painful process. It also does away with the possibility of stitch-hole abscesses, or of particles of suture being left in the wound. It prevents stitch-mark scars, and there is no tearing out of the stitches through the bruised tissues.—*Therapeutic Gazette*.

Asepsis in Tooth Extraction.—The extraction of a tooth is a surgical procedure, and as such should be conducted under strict asepsis, or as nearly so as can be obtained in the mouth by the use of harmless germicides. It is just as important that the mouth be thoroughly rinsed with an antiseptic wash immediately before extraction as it is after it. Unfortunately, most patients are only impressed with the need for rinsing the mouth to get rid of the blood which accumulates there after a tooth is drawn. They should be made to know the value of oral antisepsis prior and subsequent to any surgical work about the mouth.—M. I. SCHAMBERG, *Dental Brief*.

Chronic Alveolar Abscess.—Persons suffering from chronic alveolar abscesses are always more or less liable to some constitutional disturbances in which it would be difficult to trace the initial cause to this almost unrecognizable condition. From the fistulous opening broken-down cells are discharged into the oral cavity and become constituents of the fluids of the mouth, contaminating the secretions in such a way as to prevent its physiological action on the food that is introduced into the stomach and intestines to compensate for the waste that goes on in the body.—GEO. W. COOK, *Dental Digest*.

Abscess without Fistulous Opening.—To make a fistula, dip a serrated plugger point in a 95 per cent. carbolic acid solution. Dry gum over apex, and touch the instrument to the spot where fistula is desired, forming an eschar which can be removed with serrations of plugger point. Dip again in the acid and repeat until abscess cavity at apex of root is reached. With large round bur cut away ragged edges of process and tooth, wash out cavity with boiled water two parts, and antiseptic mouth-wash one part. Fill, and polish end of root; treat canal same as in case of chronic abscess.—H. H. SULLIVAN, *Dental Digest*.

Elevating an Impacted Third Molar.—A vulcanite cap was fitted to cover two molars and the second bicuspid, carrying a gold arm bent so as to project over the tooth to be lifted. The gum was cut away on both sides of the buried tooth sufficiently to expose enough of the lingual and buccal sides to drill holes, in which were inserted the two bent ends of a gold wire staple. A piece of rubber tubing connecting the staple and projecting arm raised the tooth sufficiently in ten days to permit its extraction, relieving a severe otalgia, from which the patient had suffered for weeks.—J. W. FOREMAN, *Ohio Dental Journal*.

Solidified Formaldehyd in the Treatment of Blind Abscess.—The ability of this gas to work beyond the apex of the root; to follow the tubuli of the dentin to the cemen-

tum; its ease of application (in the pulp chamber); the absence of strangling fumes as with the aqueous solution, and my success with every tooth so treated, compel me to believe that in solidified formaldehyd is found the most effective agent for the treatment of pulpless teeth in all stages and in all environments.—F. B. LAWRENCE, *Western Dental Journal*.

The Use of Alveolar Forceps.—When it is necessary to remove a number of broken-down teeth and buried roots, the jagged margins of the alveolar process and the numerous septa cause suffering, prolonged sometimes for weeks and months as the scar-tissue of the healing soft tissues is drawn taut across the projecting points of bone. It is a humane operation to present—by means of a surgical operation—to the torn and mangled gums, a smoothly-trimmed, rounded surface, over which they heal rapidly by first intention.—J. Y. CRAWFORD.

Treatment of Socket After Extraction of Abscessed Teeth.—Wipe out the socket thoroughly with concentrated carbolic acid; both in acute and chronic abscesses, not merely as a pain reliever, but because it thoroughly breaks up the sac, if any, or the remaining portions of it, and by its stimulating effect rapidly assists the healing process. The anodyne and anæsthetic effect is almost instantaneous.—C. P. HUBLEY, *Items of Interest*.

Conservative Methods in Antrum Treatment.—The opening through a root-canal is often sufficiently large for treatment and drainage of the antrum. In a case in which the second molar was involved the buccal roots were cleaned and filled. A platinum cylinder was cemented into the palatine root-canal, the pulp chamber and cavity being filled with amalgam around the cylinder. The diseased antrum was successfully treated by injections through the cylinder in the root-canal, and a cure effected in two weeks, the treatment having been kept up by the patient at home.—J. P. CORLEY.

Treatment of Dry Socket.—In a case of extreme pain subsequent to extraction of a third molar, the alveolus was found to be devoid of the usual coagulum and the bone bare. A stiff, dough-like paste, similar to a suppository, was made of orthoform combined with oil of sesame and glycerin. With this the socket was filled, which gave protection to the exposed tissue and almost immediate relief through the analgesic properties of the orthoform.—*International Dental Journal*.

Safe Painless Extraction.—Put in a small dish three or four drops of adrenalin and a one-fifth grain soluble tablet of cocain. Add to this twenty drops of hamamelis; this will fill an ordinary syringe and makes a pure, fresh antiseptic solution antagonistic to inflammation. Inject and you are ready to extract in two minutes. Adrenalin is the most powerful antidote known for cocain poisoning and is used hypodermatically for all symptoms that manifest in cocain poisoning.—W. CLYDE DAVIS, *Items of Interest*.

Exostosis: Symptoms.—A heavy, dark redness of the gum extending well into the lip, which fails to yield to treatment, may indicate a local crowding of the teeth, and develop into acute facial neuralgia, with darting pains passing to the temples, when we may be quite sure that the teeth are becoming exostosed. The destruction of the nerve will be necessary, and sometimes a drill opening will be advisable, as the tooth can be made comfortable for many years, at least, by frequent applications of a hot instrument forced up the opening.—LEVI G. TAYLOR, *Dental Cosmos*.

Treatment of Incipient Abscess.—Drill through the alveoli to the apex of the root and make an escape for the inflammatory products. To do this with the least pain, inject into the gum a solution of cocain and atropin in carbolyzed water. Then slit the gum and drill through the anterior plate and inject the anæsthetic into the canaliculi and tissues around the apex.—L. WEST, in *Dental Digest*.

Arrest of Hemorrhage After Tooth Extraction.—Remove all the external stringy coagulated blood; then place a small amount of cotton over (not in) the bleeding cavity and exert gentle pressure for one or two minutes; then allow the air, essential to coagulation, to reach the cavity for a second and return the pressure. Repeat until the cavity is filled with a natural coagulated mass. No drug is necessary.—W. D. COWAN, *Dominion Dental Journal*.

Removal of Adenoids.—The operation should not be performed if virulent septic infection of the pharynx or adjacent cavities already exists. In cases of middle ear supuration where adenoids are present, for some weeks before operating for the removal of the adenoids use of the following ear-drops: Biniodide of mercury in dilute alcohol (Hydrarg. Iod. Rub., gr. $\frac{1}{8}$ to $\frac{1}{2}$; Potass. Iod., gr. $\frac{1}{2}$; Alcohol, drms. 4, and water, drms. 4) or zinc chlorid in dilute alcohol (Zinc Chlor., grs. 4; Glycerin, drms 2; Alcohol, drms. 2 to 4; water to an ounce).—*Dental Era*.

Radical Treatment of Persistent Abscess.—Fill the root-canal permanently, then lance the gum over the seat of the disease; drill through the process to the root apex, and with a round bur of sufficient size cut off the apical end of the root, and remove as much of the adjacent alveolar tissue as may seem to be affected. Wash the cavity well to remove all debris, pack with iodoform gauze, and leave the result to the kind hand of nature.—S. H. GUILFORD, *Stomatologist*.

Carbolic Acid in the Treatment of Alveolar Abscess.—With a small amount of carbolic acid in the putrescent canal use a piece of soft rubber and apply pressure, filling the cavity with the rubber and forcing the carbolic acid up into and through the canal. To guard against the escharotic effect of the carbolic acid as it comes through the fistulous opening, first dry off the gum thoroughly and then paint glycerin over the surface of the gum, so that the glycerin may immediately take up the overflow of acid.—DR. AUSTIN, *Dental Era*.

Chronic Apical Abscess.—Use deliquesced zinc chlorid, on a cotton twist, for the serous discharges of an inflamed surface (chronic apical abscess without fistula). It acts like a charm in promptly checking the discharges of blood and serum, and with no ill results, as a rule. Occasionally a little tenderness supervenes, but that follows as frequently, if not more so, in cases of this kind where the drug is not used.—OTTO E. INGLIS, *Dental Digest*.

Suppurative Affections: Abortive Treatment.—The intermittent application of cold compresses or the ice-bag has proved to be of considerable value in reducing inflammatory swelling about the face and neck, and has frequently prevented the breaking externally of abscesses in these regions. While a cold application to the face does not afford the comfort or relief from pain that heat does, its tending is to prevent rather than to encourage suppuration.—M. I. SCHAMBERG, *Journal American Medical Association*.

Nerve Pain after Extracting.—If the pain is severe and continuous, resisting the action of anodynes and antiseptics, it is presumably caused by the pinching of nerve filaments in the bone surrounding the socket, and in several cases the pain has ceased at once and forever upon cutting the bone at the apex of the socket with a sharp and rapid-running bur.—HENRY D. HATCH, *Dental Cosmos*.

Treatment of Abscessed Teeth.—The rubber-dam should be adjusted and the teeth which are included sterilized, especially the cavity in the affected tooth, after which the pulp-chamber should be opened into with a suitable round bit. Usually the pus flows freely; it should be the effort at each sitting to mechanically evacuate as much of the pus as possible. When this has been done, cleanse the canals and seal in hermetically the following: Tricresol, two fluidrachms; formalin, one fluidrachm. Change every day until no more pus flows from the canals.—J. P. BUCKLEY, *Dental Review*.

Treatment of an Epulis with Injections of Arsenic.—

An Epulis which developed between an upper cuspid and first bicuspid, spreading from the buccal to the lingual side of the mouth and bleeding freely whenever touched, gradually dried up and disappeared without surgical operation, the treatment having consisted in the injection of a 1 per cent. solution of white arsenic in water. A few drops were injected, at first every day, and later every day for several weeks, using an ordinary hypodermic syringe with a freshly sterilized needle having a short point.—H. J. MOORE, *Dental Review*.

Abscessed Teeth: Extraction.—

It is not putting it too strongly to say that to extract teeth the seat of abscesses, without careful washing previously and vigorous after-treatment, is well-nigh criminal negligence. Under such conditions everything is favorable for serious complications. The dental surgeon's work should not end with the mere extraction of the tooth with an abscessed pericementum; swab the oral cavity thoroughly, before and after, making sure to carry the antiseptic solution into the wound.—D. J. BROWN, *Dental Cosmos*.

Checking Alveolar Hemorrhage.—

Five grains of tannic acid are dissolved in as much glycerin as will take up this quantity; then one-fourth of a tumbler of water is added. Two tablespoonfuls of this are to be taken every half hour until three doses are consumed. Very efficacious when the bleeding is very profuse and continued for several hours.—CHAS. P. CHUPEIN, *Items of Interest*.

Pain Following Extraction.—

In some cases it may be necessary to use heat in order to lessen the tension, but it is only logical to apply the heat directly to the parts affected, using pledgets of cotton steeped in hot water; one or two per cent. solution of carbolic acid has been suggested, or a hot infusion of camomile flowers.—CHAS. B. ISAACSON, *Dental Digest*.

After-pains of Extraction.—The pain after extraction, or, more correctly, neuritis of the alveolus, will most generally be found in an inflammation of the continuation of the alveolus. The rending of the periosteal nerves, the pulling and expansion of the osseous walls, a scarcely apparent fracture, may all contribute to torture the patient for days. If in these cases every part of the socket is thoroughly wiped with concentrated carbolic acid, pain will cease at once, with no subsequent ill effects.—ARTHUR SCHNEUR, *Prager Med. Woch.*

Extraction of First Molars.—Extraction of the first permanent molars before the eruption of the second molars will many times shorten the bite, allowing the jaws to come closer together; the bicuspid not being allowed to erupt fully, the under pressure on the upper anterior teeth causing their protrusion and the lower to come in contact with the gums. The second molars not infrequently tilt forward into the space, not only forming lodging places for food, but causing serious malocclusion.—H. A. PULLEN, *Dominion Dental Journal*.

Alveolar Abscesses.—Operations of filling with gold, or fitting bands for crowns, etc., should be postponed for at least two or three weeks after a severe acute, or even a chronic, alveolar abscess has been restored to a normal physiological condition. The parts should be allowed to rest for a sufficient length of time for the tissues to readjust themselves to a normal mechanical resistance to irritating agents that are not infectious in character.—GEO. W. COOK, *Dental Digest*.

Hemorrhage after Tooth Extraction.—Prolonged bleeding after extraction may be caused by the dental artery becoming entangled in the ragged edges of the alveolus and its mouth being held open. In this case the bleeding would be red blood, spurting in jets. A drill run down into the cavity would disentangle the artery and stop the bleeding.—H. E. BELDEN, *Dental Digest*.

Treatment of Pain Following Extractions.—The use of adrenalin as an adjunct to cocain has its decided merits, but as it increases arterial tension, in weak hearts it is very apt to produce syncope, especially in diabetes and Bright's disease, though while the sequelæ from the use of this drug might be alarming, in my experience so far they had not proved fatal.—CHARLES B. ISAACSON, *Dental Digest*.

Impacted Temporary Molars.—When a temporary molar has been allowed to remain in place until the first molar and the bicuspid have grown up and over, wedging the deciduous tooth tightly in place, my method is to divide the tooth from the lingual to the buccal side down to the bifurcation of the roots, using a No. 3 or 4 cross-cut bur in the engine. When the tooth is thus divided the removal of the portions is easily done with an elevator.—J. C. MCCOY, *Pacific Dental Gazette*.

After Tooth Extraction.—Place in the socket a pledget of cotton immersed in a hot aqueous chloreton solution, especially if there be any pain after extraction, and more especially when there has been an acute abscess or after removal of necrosed bone. The operator need have no fear in permitting his patient to leave the office with the chloreton in the tooth socket, while we cannot have the same sense of security after the use of cocain.—C. H. OAKMAN, *Dental Review*.

Pain after Extraction.—Curette and thoroughly cleanse the alveolus and irrigate copiously with hot water. Apply two drops of pure carbolic acid and pack loosely with sterilized gauze. If the pain does not cease saturate a small pellet of cotton with campho-phenique, take up with it a small amount of morphin-acetate and carry to the bottom of the socket. The morphin-campho-phenique dressing produces most remarkable results, the pain disappearing almost instantaneously.—J. ENDLEMAN, *Dental Register*.

Treatment of Abscess.—Don't forget that good old-fashioned beechwood creosote, if properly used, will do more to cure an abscess than any other remedy. It breaks up the walls of the pus sac and fistula and promotes granulation. Discard the syringe and pump the creosote through the canal of the tooth until it appears at the fistulous opening. Use a napkin to protect the mucous membrane.—M. W. SPARROW, *Dominion Dental Journal*.

Carbonized Cotton After Extraction.—Carbonized cotton gives most satisfactory results. It is perfectly aseptic, absorbs a great quantity of coagulating remedies, remains sweet a long time, leaving the wound sweet and clean. Used with a three per cent. solution of peroxid of hydrogen it will check the most obstinate cases of bleeding. Hold the finger on the dressing until the frothing ceases or the soft cotton may be ejected from the wound.—A. JESSEL, *Dental Review*.

Safe Painless Extraction.—Put in a small dish three or four drops of adrenalin and a one-fifth grain soluble tablet of cocain. Add to this twenty drops of hamamelis; this will fill an ordinary syringe and makes a pure, fresh, antiseptic solution antagonistic to inflammation. Inject and you are ready to extract in two minutes. Adrenalin is the most powerful antidote known for cocain poisoning and is used hypodermatically for all symptoms that manifest in cocain poisoning.—W. CLYDE DAVIS, *Items of Interest*.

Extraction for the Cure of Abscess.—"What is our business in life? To take out an inefficient organ which is suffering for a moment with a passing disease? An abscessed tooth is very easily curable; then why in heaven's name should we extract it? The extraction of teeth, it seems to me, is the practice of the inefficient man. The curing of an abscess is an extremely simple thing in almost every case and the preservation of an abscessed tooth is the simple duty of the accomplished dentist.—N. S. JENKINS, *Items of Interest*.

Impacted Third Molar Teeth: Diagnosis.—Note the thickness of the tissues; the amount of process involved; the presence of any foreign body; the direction in which the tooth lies; its relation to the second molar, and the duration and magnitude of the disturbance. The diagnosis of a partial impaction can be made in the majority of cases with an explorer; the tissue is retracted, the size of the crown noted and the direction of the roots ascertained.—GEO. W. WINTER, *The Dental Era*.

Cataphoresis—Treatment of Alveolar Abscess.—Fuse a small elongated bulb of zinc on to a platinum wire for positive electrode. Coat the zinc bulb with mercury and insert into fistula or incision. The electrolytic action of the current dissolves a small portion of the zinc bulb and deposits within the abscess cavity the chlorid of mercury and zinc. If painful, use a few drops of cocain on the zinc electrode, combining anæsthesia with electrolysis.—JOHN M. FOGG, *Dental Cosmos*.

Hemorrhage After Tooth Extraction.—The problem is simply that of plugging up the hole out of which the blood flows. * * * What better fitting plug can be found than the extracted tooth? Dip its roots in tannin or powdered alum and press it back to place. It can be removed later when all danger of hemorrhage is past, or if necessary it might be allowed to remain on the principle that a live man with a bad tooth is better than a dead man without a tooth.—*Dental Cosmos*.

Tooth Extraction.—After injecting local anæsthetics, with a No. 5 bur carefully drill the process away so that your instrument may reach the bifurcation of a molar. If a single rooted tooth, cut process away until you are sure of your hold. Explain the reason for this to the patient and you not only avoid fractures, but establish a reputation for skill and carefulness.—FRED. H. METCALF, *Pacific Dental Gazette*.

In Case of Accidental Opening into a Healthy Antrum in Tooth Extraction.—It is altogether unnecessary to treat antral cavities that have been accidentally opened, for the reason that soon after the extraction the blood from the alveolus becomes coagulated and closes up the opening. Should the opening be larger, however, means must be employed to close it.—DR. SZABO, *Dental Cosmos*.

Hemorrhage after Tooth Extraction.—Pack the alveoli with iodoform gauze covered by a ball of cotton retained in position by rubber dam secured with ligatures to the neighboring teeth. Cut away the redundant portion of the rubber dam. This permits irrigation of the mouth and the taking of food. The slight periostitis that may ensue helps towards recovery by stimulating granulation.—JOHANN FRANCK, *Dental Cosmos*.

Root Amputation.—If the root has lost its membrane, cut it away as far as this is the case. If we wish to effect a permanent cure we must get cementum and a new periodontal membrane over the end of the root. In some cases we do not get it, and in a year or two, maybe in less, we will have a new alveolar abscess, or you may get absorption of the end of the root as a result of this operation.—G. V. BLACK, *Dental Review*.

Antral Troubles: Over-treatment.—In many cases of long standing my advice has been to try letting alone for awhile. Many of the cases have healed without further treatment. In many cases the mistake is made of over-treatment. The treatment is the cause of the continuance of the trouble, and not any diseased condition.—B. N. STROUT.

Antral Operations.—In opening into the antrum use a local anæsthetic, consisting of a mixture of cocain and chloretone. Make a liberal opening and immediately place a large plug of cotton, saturated in a hot aqueous solution of chloretone, near the floor of the antrum, completely filling the wound.—C. H. OAKMAN, *Dental Review*.

Diagnosis of Diseased Antrum.—A test that is simple, painless, and which will give a fair amount of positive evidence, consists in using a tuning-fork over the antrum and the teeth, the first and second molars preferred. If the antrum is free and clean the tuning-fork will be heard with equal distinctness and of like character, over each side and in either location. If one antrum contains fluid, it will not be heard so distinctly; perhaps very faintly; perhaps not at all.—*Therapeutic Gazette.*

Persistent Alveolar Abscess; Treatment by Extraction and Replantation.—This method is indicated (1) when the ends of the roots have become necrosed; (2) when a broach protrudes through the apex and cannot be removed; (3) teeth in which calcification has taken place rendering other treatment doubtful; (4) perforation of the cementum; (5) when canals are too tortuous to permit of proper cleansing.—JOSEPH E. WILKINSON, *Dental Cosmos.*

Persistent Hemorrhage after Tooth Extraction.—Wash the cavity with hot water and insert a plug of cotton filled with the subsulphate of iron, or dust the socket well with the subsulphate and insert a plug of softened gutta-percha pressed firmly down into the socket, ligating it down in such a manner as to secure pressure. Instruct the patient to maintain an upright position, thus securing the benefits of gravity.—TRUMAN W. BROPHY, *Dental Cosmos.*

Indurated Abscess.—When an alveolar abscess assumes a condition of induration instead of the softened puffiness pending the formation of external fistula, adjust rubber-dam and fill the root-canal with a paste composed of chalk combined with a little carbolic acid and glycerin, with crystals of iodine added. Mix the paste fresh each time if necessary to repeat.—*Office and Laboratory.*

Formaldehyd in the Treatment of Alveolar Abscess.—Clean the canal, drop in formaldehyd, close with cement to prevent the gas from coming out compelling it to go the

other way. It will follow the canal where the pus has burrowed, absolutely and completely sterilizing, as if it had passed through fire. This will close up in a few hours and it is gone.—DR. LAWRENCE, *Western Dental Journal*.

To Prevent Hemorrhage After Tooth Extraction.—If there is a suspicion that the patient is hemorrhagic, replace the tooth after cutting off half or a third of the tooth. The tooth invariably gets loose after a short time, and is removed by the fingers. I have used it several times, and it has always proved efficacious.—BEADWELL GILL, *Journal British Dental Ass'n*.

Antral Troubles.—Boracic acid solution, four per cent., is, in my judgment, the best of all washes, but other similar remedies will produce good results. Active germicides, as bichlorid of mercury and carbolic acid, are too irritating except in case of deep ulcerative points, while strong carbolic acid applied once a week, in addition to ordinary irrigation, will produce the best of results.—THOS. FILLBROWN, *Items of Interest*.

The Best Way to Inject an Abscess.—The best way, ordinarily, to inject an abscess, is to pack the canal lightly with cotton saturated with the medicament, and to force down on it a piece of unvulcanized rubber. When the medicament appears at the fistulous opening, if of recent occurrence, the cavity may at once be sealed.—W. J. MORGAN, *Dental Digest*.

Flushing the Antrum.—An ordinary fountain syringe, holding a quart or more, is the most effective apparatus for irrigating the antrum, the patient's head being lowered to a point that will prevent any of the fluid running into the throat, using a slightly saline or alkaline solution. The patient can use this and irrigate as often as the conditions require, ordinarily from two to half a dozen times a day.—E. L. TOWNSEND, *Pacific Stomatological Gazette*.

Extraction of Third Molars.—There is one condition wherein it is not well to extract the third molars, viz.: when the added diameters of the teeth do not equal the space in the jaw allotted to the teeth and therefore they have a tendency to separate. Such teeth are not apt to decay, and the third molars may help to hold them in their original positions.—HORACE WARREN, *Dental Summary*.

Hemorrhage After Tooth Extraction; Picric Acid.—Place a drop of creosote, or carbolic acid, and a drop of nitric acid side by side on the top of an inverted glass. Now take a pledget of cotton and dip it first in one and then the other, and after waiting a moment pack securely in the alveolus. The union of the creosote, nitric acid and cotton forms a violently explosive compound, and must be handled with care.—G. T. BAKER, *International Dental Journal*.

Lactate of Silver in the Treatment of Chronic Abscess.—I have experienced much benefit from lactate of silver in the treatment of chronic abscesses at the roots of teeth, succeeding with it where other remedies have failed. Use one part of the powder to 500 of water, injecting with hypodermic syringe through the fistulous opening well into the abscess.—H. W. MOORE, *Dental Digest*.

Antrum Treatment Through a Root-canal.—I would rather devitalize a sound tooth, if necessary, and treat through the canal, than remove a bad tooth and treat through the socket. There is always more or less shrinkage and absorption after tooth extraction, and to preserve the opening and prevent food from opening it may be necessary for the patient to wear a plate.—J. P. CORLEY.

Drainage of Abscesses.—In all cases of abscesses in the mucous tissues of the mouth I insist on the use of 95 per cent. carbolic acid on the tent. A very small amount retained in the gauze or cotton is sufficient to cauterize the lips of the incision, making the opening free, promoting the egress of pus and preventing the ingress of new infective material.—G. V. BLACK, *Northwestern Dental Journal*.

Pyrozone as a Styptic.—In the bleeding of the gums so troublesome in crown- and bridge-work, a 25 per cent. solution pyrozone applied to the gum acts as a styptic, and in my hands has never resulted unhappily. Use in the same manner for the insertion of gold fillings at cervical margins, one or two applications rendering the gum perfectly dry for ten or fifteen minutes.—DR. WITTLANDER, *Dental Practitioner*.

Severe Hemorrhage.—In the case of a bad bleeder, suffering from anæmia, and for whom it was necessary to remove some bad roots, treatment for three or four days beforehand with thirty-grain doses of calcium chlorid had a perfectly marvelous effect, the bleeding being quite under the normal.—MR. R. H. BATES, *Dental Record*.

For Relief of Nausea and Headache After Nitrous Oxid Anaesthesia.—Give a tablet containing cocain hydrochlorate 1-12 grain, bismuth subnitrate 2 grains, oxalate of cerium 2 grains. Headache can be corrected by 5 grains antikamnia, or a teaspoonful of hydrobromate of caffeine in a half glass of water; to be taken during effervescence.—A. E. MANN, *Ohio Dental Journal*.

Hemorrhage from Socket After Tooth Extraction.—When there is a tooth standing on each side of the bleeding socket, it is easy to tie a silk ligature round each of these teeth, and by tying across the opening retain firmly any plug used as a hemostatic.—M. WOODHOUSE, *Journal Brit. Den. Ass'n*.

Antrum Treatment.—If you use peroxid of hydrogen, be careful with it, for almost all peroxid is strongly acid in reaction, and it smarts. Add, just before using, limewater or sodium bicarbonate and test it with litmus paper until neutral in reaction, and you will find it is no longer painful. I neutralize it and then use it full strength.—R. H. M. DAWBORN, *Dental Cosmos*.

Orthoform After Tooth Extraction.—Pack the socket lightly with moist cotton dipped in orthoform; absolute cessation of pain follows.—H. G. KAHLO, *Indiana Dental Journal*.

Extraction of Difficult Roots.—If a hole is drilled in the root and a thread cut with a tap, a screw may be turned, in which can be firmly grasped with a pair of pliers, and by a slight lateral motion the root loosened, and brought away without injury to the alveolus.—T. M. HUNTER, *Items of Interest*.

After-pains of Extraction.—Apply orthoform after every extraction, completely filling the wounds with the pain-allaying antiseptic; even though, as after the extraction of many teeth, the wounds are numerous, this can be done without fear, as orthoform is absolutely non-poisonous.—WM. ROTENBERGER, *Therapeutic Progress*.

Arrest of Hemorrhage After Extraction.—Wash the alveolus forcibly by a jet from the water syringe to remove all the blood clot. Plug immediately with iodoform gauze, bringing it into direct contact with the bleeding wound. Press the plug in as tight as possible, and press the alveolus laterally with the fingers.—(Translation) H. PRINTZ, *Ohio Den. Jour.*

Paraffin in Oral Surgery.—Paraffin injected beneath the mucous membrane lining the alveolar sockets of teeth, immediately after extracting and stopping of hemorrhage, will prevent the entire absorption of the bone. This is of great importance, especially in the preservation of the cuspid eminence, retaining the facial contour.—RUDOLPH BECK, *Dental Digest*.

Paraffin in Oral Surgery.—Use paraffin in the treatment of long-standing chronic abscess. In cases when nothing will avail but burring away necrosed bone, smooth the apex of the root and fill the cavity thus created with paraffin, care being taken to close the field of operation with a stitch or two in the gum tissue.—C. T. GRAMM, *Dental Digest*.

Alveolar Hemorrhage.—In a case where other well-known methods had failed and the patient was becoming alarmingly weak from loss of blood, sulphuric acid dropped in the socket, after washing the mouth out with warm water, caused the flow to cease within three minutes, and there was no subsequent return.—R. W. TURNER, *Items of Interest*.

Extracting Difficult Roots.—Drill into canal with B size Howe twist drill in the engine. Tap with same size Howe screw tap. Screw in bright metal post, following with the chuck, till it nearly or quite touches the root. With forceps grasp chuck and extract with as straight a pull as possible. Avoids all laceration of gums by injury to alveolar process.—A. J. BUTLER, *Dental Cosmos*.

Alveolar Hemorrhage.—Roll a pellet of cotton the size and shape of the socket and saturate the end with nutgalls. Force up into socket, following with other pellets, until the outer margin of the gum is reached; then place a pellet the size of a walnut to antagonize the opposing teeth, and bandage the head, holding the jaws firmly together.—H. H. BENJAMIN, *Items of Interest*.

For Removing Loose Roots, Spiculæ, etc.—A pair of artery forceps will be found a very useful instrument for removing loose roots, spiculæ of bone, etc. You can get them at any surgical supply house for forty or fifty cents per pair. There are many varieties, but a strong pair with slightly pointed beak is most suitable.—W. H. ALBRIGHT, *Dental Summary*.

Harelip.—When operating on cases that have teeth the greatest care should be taken to see that the teeth are sound. Offending teeth should be extracted or filled, as seems best to the dentist, for he must be called in as an ally. If an operation is performed and the teeth are carious, great risk of infecting the wound will be run.—J. E. THOMPSON, *Texas Medical News*.

Extracting Roots.—When a root is broken off below the margin of the alveolar process, inject cocaine, and with a sharp bur remove the process on either side of the root as far as desired, or until the root can be grasped with the forceps. With local anaesthesia the operation is a painless one.—D. D. ATKINSON, *Am. Den. Weekly*.

Care of the Mouth after Tooth Extraction.—Instruct the patient to keep the socket free of all food, and after each meal to use a mouth-wash composed of one part listerin and three parts warm water. This will keep the sockets clean and antiseptic, and nature will perform the necessary repairs.—HARRY L. KING, *Ohio Dental Journal*.

Opening into the Antrum.—The opening should never be made with a chisel. Drive a chisel through a thin board with a hammer and you will find the opposite side all splintered. This is a fair illustration of the condition of the inner side of the antrum wall after a chisel has been used.—T. L. GILMORE, *Dental Digest*.

Extracting Upper Cuspids.—Sometimes the upper canines are very difficult to extract. When extracting the upper teeth for a plate, remove the teeth on each side of the canine and grasp it at the sides. The sides being more flat, the forceps will not slip, and the tooth can be easily rotated.—OTIS TROTTER.

After a Major Case of Extraction.—To bridge the interval between retraction for a full upper denture and insertion of plate, make a wax base-plate to be worn during the interval, to be removed of course when eating. This will afford great relief to the lacerated tissues and prevent inflammation.—W. D. COWAN, *Dominion Dental Journal*.

The Electric Current in Tooth Extraction.—Limit the field to the tooth to be extracted by means of a gutta-percha cap lined with gold leaf, and apply an electric current of high frequency. Perfect analgesia is obtained in a few minutes.—*Cyclopædia of Medicine*.

Hemorrhage after Extraction.—Dissolve antipyrin in camphophenique, making a saturated solution. Make a saturated solution. Make a pledget of cotton to conform to socket, saturate with the solution, and pack into the socket. Apply compress if necessary.—P. S. TURNER, *Texas Dental Journal*.

Adrenalin Chlorid as a Hæmostatic.—Saturate a pledget of cotton with the solution, place it over the surface to be affected, press the nozzle of a chipblower firmly against the cotton and force air through it a few times.—S. PRESTON, *Dental Cosmos*.

Alveolar Hemorrhage.—In a case where other remedies had failed and the patient was becoming alarmingly weak from loss of blood, sulphuric acid dropped in the socket (after washing the mouth out with warm water) caused the flow to cease within three minutes, and there was no subsequent return.—R. W. TURNER, *Items of Interest*.

Root Amputation.—When a pyorrheal condition has been complicated with abscess, the palatal roots of lower molars will often be found entirely denuded. It takes but a few revolutions of the bur to amputate close to the crown, filling the end of the stump with amalgam, subsequently polishing.—M. L. RHEIN, *Items of Interest*.

Chronic Inflammation of the Antrum.—Irrigate the antrum with hydrogen dioxid and with potassium permanganate or potassium chlorid. At the stage of vegetation chromic acid followed by irrigations, and at the stage of necrosis, lactic acid followed by non-irritant antiseptic washes.—OSCAR AMOIDO, *Dental Cosmos*.

Painful Eruption of Third Molar.—Dip a small piece of cotton-wool in melted crystals of carbolic acid and a little cocain and pack between the erupting tooth and the gum, also touching the surface of the gum with it. Better than lancing the gum, which leaves a tough cicatrix; or than excising the gum, which is very painful.—A. T. COUCHER, *Jour. Brit. Assn.*

Alveolar Abscess: Extraction.—When once the decision is reached that a tooth will be of no further service to the patient, or that its removal is essential to the cure of an abscess, no time should be lost in relieving the patient of the offending member. The antiquated method of awaiting the passing of the acute stage is without justification, and this practice should be condemned as obsolete and pernicious.—M. I. SCHAMBERG, *Dental Digest*.

Extraction of Abscessed Tooth.—There is no more reason why an abscessed tooth should be retained in the jaw simply because the face is swollen than there would be to allow a splinter of wood to remain in the hand, a piece of glass in the foot, or a piece of steel in the eye, until the inflammatory symptoms have subsided before attempting to remove it, since the forms of pathology are identical.—*Items of Interest*.

Surgical Operations on the Face.—The wrinkles on the face are always at right angles to the direction of the muscular fibres, and this should be remembered when incisions are made. Have the patient to wrinkle the part, and note the normal wrinkles; make your incision parallel with such wrinkles, and the resulting scar will be but little noticed.—H. C. BOENNING, *Stomatologist*.

Extracting Frail Roots.—If a frail root is filled with a quick-setting cement just before extracting, but allowing time for the cement to set of course, the danger of crushing with the forceps is lessened. Care should be taken not to force the cement beyond the apex.—M. A. WAAS, *Dental Review*.

Pain Following Tooth Extraction.—Fill the alveolus with a cotton tampon saturated in a solution of equal parts chloral hydrate, glacial phosphoric acid, and glycerin, and the pain will disappear. Besides its pain-relieving properties this dressing is a powerful antiseptic.—*Review de Dental Appliquée*.

Removal of Gum Tissue Over Impacted Third Molars.—

Use a pair of sharp scissors, which crushes the vessels together and causes less bleeding than the knife. The use of scissors also lessens the danger of sepsis by preventing pus and clots from being carried into the vessels.—G. LENOX CURTIS, *Dental Review*.

Removal of Adenoids.—The poor results obtained from this operation are usually due to the lack of supplementary treatment following the operation. The removal of obstructions will not be followed by nasal breathing except through the proper training of the child in overcoming the habit. The second step should be the correction of dental deformities.—*Cincinnati Lancet*.

Fracture of the Maxilla in Tooth Extraction.—This is most liable in mouths that have had suppurative conditions about the teeth, for in such cases ankylosis of the tooth to the bone usually follows if the pathological condition has extended down in the socket for any distance.—S. L. McCURDY, *Dental Summary*.

Tooth Extraction.—The extraction of teeth for the insertion of artificial dentures is a much graver crime than the average dentist realizes, for it is a fact that the physiological action of the saliva and mucous membrane is very different in a mouth wearing a denture from one with the natural teeth.—J. B. DICUS, *Dental Digest*.

After-pains of Extraction.—Relief may be given in a short time by inserting in the socket a pellet of absorbent cotton dipped in chloroform; place in each root socket, leaving it there a minute or two. In extreme cases repeat. Relief is sure to follow.—H. A. CROSS, *Dental Review*.

Arrest of Hemorrhage After Tooth-extraction.—With hypodermic syringe inject a few drops of a three per cent. solution of pyrozone, or peroxid of hydrogen, in the apex of each alveolar socket and around the gum margin. The instantaneous expansion stops all hemorrhage immediately.—W. M. BARNETT, *Dental Digest*.

To Kill an Abscess.—After lancing an abscess it is often desirable to leave a cone of medicated cotton in the opening. Dip a gutta-percha point in chloro-percha, and while still sticky wrap it with cotton to make a cone. Dip the tip end in the medicated solution and it will go to the bottom every time.—G. A. BRONSON, *Dental Digest*.

Opening an Abscess.—If the reverse end of a match be dipped in a saturated solution of carbolic acid and cocain and applied prior to the injection of cocain, with gradually increasing pressure at the point of the gum where the needle is to be inserted, it will render the operation painless.—B. HOLLY SMITH, *Dental Digest*.

Hemorrhage after Extraction.—In a case of any severe continued bleeding where other remedies failed, a plug of cotton wool dipped in adrenalin and then in tannin stopped the bleeding completely in ten minutes. It forms a pasty mass and seems to stick the gum down.—J. S. DICKIN, *Dental Record*.

Fractured Edentulous Jaw.—In edentulous cases of fracture there is usually a plate that was worn at the time of the accident. This makes a beautiful interdental splint and solves the difficulty of adjusting the parts and the delay of making a splint for the case.—J. D. PATTERSON, *Dental Cosmos*.

The Best Styptic.—For hemorrhage after extraction, or from the gums of the grinding roots for band fitting, the suprarenal extract is the best styptic, clean in use and prompt in action. When an anæsthetic is needed, add chloreton to the suprarenal extract and wipe the gum with the mixture.—F. H. LEE, *Dental Digest*.

Chronic Alveolar Abscess.—Cleanse the root-canal and insert a dressing of cotton saturated with a saturated alcoholic solution of thymol crystals. Seal tight with gutta-percha and leave in place for four or five days. Repeat if necessary.—W. H. HERSH, *Dental Review*.

Fracture of the Alveolar Walls.—In case of fracture of the alveolar process in the extraction of teeth, the plates of bone should be forced back into position with the fingers or thumb, forcing the borders into place. This is important to the adaptation of a plate when the process has healed.—H. J. GOSLEE, *Dental Review*.

Uses of Pyrozone.—Where alveolus has been perforated by the progress of suppuration, and the soft tissues have not got sloughed, I advise free lancing over the congested parts and the insertion of a pledget of cotton saturated with a 25 per cent. solution of pyrozone, which should be allowed to remain for a few moments.—DR. WITTLANDER, *Pacific Stom. Gazette*.

Treatment of Chronic Abscess.—In all forms of chronic abscess there is present caries of the outer periphery of the end of the root, as well as of the alveolar plate in which the root is imbedded. As long as any of the necrotic tissue is allowed to remain it will be impossible to effect a permanent cure. Surgical interference is logically the only resource at our command.—M. L. RHEIN, in *Dental Cosmos*.

After-Pains of Extraction.—Clean out the socket and dust with orthoform, seal loosely with cotton. Gives relief for from six to twenty-four hours. More than two applications rarely necessary.—A. D. KEYSER, *Items of Interest*.

Treatment of Abscesses.—Thymol is very insoluble under ordinary circumstances, but it dissolves in oil of eucalyptus, when it becomes a valuable agent in the treatment of abscesses, especially the mild form of chronic blind abscesses.—GEO. W. COOK, *Western Dental Journal*.

After-pains of Extraction.—If a 5-grain tablet of anti-kamnia be crushed to a powder and—on a moistened pledget of cotton—placed into the socket of the tooth giving pain, the pain will be promptly relieved.—T. F. CHUPEIN, *Dental Office and Laboratory*.

The Syringe for Antrum Treatment.—Use an ordinary large water syringe, but solder the end and drill a number of fine holes around the point, which thus forces the wash against the sides of the cavity. Use a solution of boracic acid in hydrogen dioxid.—B. J. CARR, *Dominion Dental Journal*.

To Extract a Badly Broken-down Molar.—Divide it in a line between the lingual and buccal roots, using large-sized spear-point and fissure drills in the engine. Then insert one beak of the forceps in the place drilled and remove the roots separately.—SCOTT THOMAS, *Dental Hints*.

Arrest of Dental Hemorrhage.—From 5 to 10 parts gelatin are to be dissolved in 100 parts sodium chlorid solution. Liquefy in hot water, saturate a cotton or gauze plug and insert in the alveolus.—Trans., H. PRINZ, in *Ohio Dental Journal*.

Hemorrhage after Extraction.—In a case of profuse bleeding from the socket after extraction, after twice placing a pellet of cotton filled with suprarenal powder in the socket the bleeding stopped almost instantly.—E. H. RAYMOND, *International Dental Journal*.

Protection for Slight Wounds.—Collodion and balsam of Peru 1-10 give excellent results; will remain intact for days; washing with soap and warm water does not disturb it.—B. J. CIGRAND, *Dental Digest*.

Chronic Alveolar Abscesses.—Carbolic acid is simply a *specific* for the treatment of chronic alveolar abscesses. My records for the past three years show over ninety per cent. of such cases cured with this agent.—G. B. SQUIRES, *Items of Interest*.

Fractures of the Inferior Maxilla.—In all cases where it has been necessary to insert wire sections I have wired from the inside to avoid lacerating the face, and in all cases have wired the fragments to the splint, instead of to each other.—F. T. VAN WOERT, *Items of Interest*.

Mouth-wash for Use After Implantation.—Have the patient use, several times daily, a wash composed of boracic acid dissolved in equal parts cassia and peppermint water. By adding one drachm of chloroform water to a pint of the above it becomes quite agreeable.—*Dental Review*.

Antral Treatment.—When it is a question between saving a tooth and being embarrassed by the presence of the tooth, it is better to sacrifice even a good tooth, if that will give assurance of satisfactory results.—L. G. NOEL.

Extracting Badly Decayed and Broken Off Upper Molars.—Cut through with a bur, separating the lingual from the buccal roots, which can then be removed singly.—G. H. KITTELL, *Western Dental Journal*.

A Hint on Extracting.—After extracting abscessed teeth, always syringe the sockets with hot water and an antiseptic, especially in the lower jaw, where pus may remain in a socket after extraction.—*Dom. Den. Jour.*

Necrosis: Treatment of Wound.—For irrigation of wound, after removal of necrosed bone, add one drop of oil of cassia to two ounces of a saturated solution of boracic acid.—ARTHUR D. BLACK, *Dental Review*.

Hemorrhage After Tooth Extraction.—Excellent results have been obtained from a mixture of one part chloroform with fifty parts water, in rapidly arresting hemorrhage after tooth extraction.—D. SPAAK, *Jour. Med. Paris*.

To Arrest Hemorrhage after Pulp Extraction.—Pack the canal with solution of adrenalin chlorid, which is one of the best agents for stopping hemorrhages at any point.—C. N. JOHNSON, *Dental Digest*.

To Believe Pain in a Socket after an Extraction.—A small quantity of powdered borax with very warm water is often all that is required to give relief.—C. L. TOOL, *Dental World*.

Chloroform as a Styptic.—Excellent results have been obtained from a mixture of 1 part chloroform with 50 parts water, in rapidly arresting hemorrhage after tooth extraction.—DR. SPAAK, *Journal de Medicine de Paris*.

Hemorrhage after Extraction.—In case of hemorrhage after tooth extraction, phenol sodique can be relied upon to answer every purpose.—*Dental Era*.

Adrenalin and Cocain.—Use adrenalin in combination with cocain, to prevent pain and hemorrhage in small operations.—H. MYNTER, *Medical News*.

Aborting Alveolar Abscess.—A prolific source of septic pericementitis is escaping micro-organisms and ptomaines from putrescent root-canals, but in many instances abscesses may be prevented by the use of proper remedies at the proper time. The first duty is to open the canal and let the confined gases escape. Both the tooth and the infected peridental membrane requires treatment. To aid nature in readjusting the abnormal condition the following prescription will prove useful:

R. Potassii iodidi3i

Syrupi sarsaparillæ comp.....f ʒiii. M.

Sig.—Take a teaspoonful three times a day after meals.

The teaspoonful may be added to half a wineglassful of water to further dilute the potassium iodid.—J. P. BUCKLEY, *Dental Review*.

Hemorrhage after Tooth Extraction.—

R. Rosin

Carbolic acid95 per cent.

Chloroformāā ʒ iv

Successful in a case of secondary hemorrhage commencing to bleed four days after the extraction of two wisdom teeth—one upper and one lower, which resisted tannin, persulphate of iron, etc.—N. B. SIBLEY, *American Dentist*.

Adrenalin Chlorid.—For controlling hemorrhage in minor surgery, and in dental operations about the gingivæ, there is nothing to equal it. I would not practice a day without it.—H. H. JOHNSON, *Dental Clippings*.

Traumatic Alveolitis.—In traumatic alveolitis relief can be obtained by a thorough curetting of the irregular edges, cleaning of the socket, obtaining as smooth a surface as possible, irrigating carefully and packing with iodoform or aseptic gauze dipped in orthoform or nosophen. For swollen glands I have used the following ointment:

R. Ichthyolis
 Ung. Hydrarg. Ammonaa 5j
 Potassii Iodidi3ij
 Ung. Zinci Oxidi3j

This ointment has a decided healing effect.—CHAS. B. ISAACSON, *Dental Digest*.

Acute Abscess.—Whether incipient or advanced, administer sulphid of calcium in $\frac{1}{4}$ -grain doses every three hours. Given early enough it prevents the formation of pus. If suppuration has commenced, it limits its extent and favors early and complete evacuation. To relieve the pain, prescribe at the same time:

Tinct. opii m. xxx
 Aqua cinnamoniad 3 viij

Teaspoonful every half hour through the day.—J. W. VAN DOARN, *Ohio Dental Journal*.

After Pains of Extraction.—

R. Menthol5i.
 Chloral hydrate5i.
 Camphor gum3ss.
 Alcoholfl 3i.

Wash out the socket with warm carbolized water and introduce cotton saturated with the above.—I. HENRY MORGAN, *Atlanta Dental Journal*.

Impacted Third Molars.—Paint the inflamed tissues with the following combination:

R. Zinc iodid	dr. iii
Distilled water	oz. i
Tinct. iodin	dr. v
Glycerin to make	oz. iv
(PRINZ.)	

After the swelling and pain have subsided the impacted tooth should be removed.—F. K. REAM, *Dental Digest*.

Alveolar Abscess.—Quite frequently after the formation of pus has been checked we have a weeping of serum from the canals. The following formula affords an excellent remedy to use in this case:

R. Eucalyptol	3j
Thymol	gr. x
M.	

—J. P. BUCKLEY, *Dental Cosmos*.

Abortive Treatment in Forming Alveolar Abscess.—

R. Tinc. aconite	gtt. x
Tinc. echanacea	gtt. xx
Liquor calcis	3ii
Aqua	q.s. f. 3iv

Teaspoonful every hour.—W. CLYDE DAIRS, *Items of Interest*.

CHAPTER VIII

PULP DEVITALIZATION—ROOT CANAL TREATMENT, FILLING, ETC.

Pulp Devitalization.—Notwithstanding the advantages of pressure anæsthesia, there are still cases where arsenic can be employed. Satisfactory results are obtained from the following modified formula of Dr. A. W. Harlan:

B. Acidi arsenosi	3i
Cocainæ hydrochloratis	gr. xx
Menthol	gr. v
Lanolini	q. s. ft. stiff paste. M.

Sig.—Apply in the usual manner.

Very little lanolin is required and the least used the better will be the result.—J. P. BUCKLEY; *Dental Review*.

Pulp Devitalization; Arsenic.—Though contrary to accepted teachings and practice, the arsenical paste—white arsenic, morphia acetate of each equal parts, creosote q. s.—should never be placed in contact with pulp tissue; the application should always be made to intervening vital dentin. The application may be made in a cavity remote from the pulp—a drill-pit made for the purpose if necessary—with perfect assurance, provided it is secured there in contact with sensitive dentin.—D. D. SMITH, *Dominion Dental Journal*.

Pulp Devitalization.—My method is to apply arsenic fibre to the exposed pulp, if not inflamed, for from twenty-four to forty-eight hours, and then under aseptic precautions

to remove the bulbous portion of the pulp and place in contact with the stump a 5 per cent. solution of formalin. This is left in contact sealed in for three days, when we find the pulp of the consistence of catgut and readily removed with the pliers.—J. I. HART, *Dental Cosmos*.

Pulp Devitalization.—When the pulp must be destroyed, it is almost if not quite criminal to use so dangerous a method of poisoning with arsenious acid when we have at command such methods as the chlorid of ethyl spray, cocain in crystals or solution applied to the pulp, or injected into it, or cataphoresis to anæsthetize it, when it may be removed with as little pain as you would remove a shred of gum tissue.—J. TAFT, *Dental Cosmos*.

Pulp Devitalization.—Make a paste of arsenic, acetate of morphia and cocain. Place a small particle of the paste on a slab, and with spatula work it into a small pellet of cotton. Make a concave cap of air-chamber metal, smear the concavity with Canada balsam, to which the pellet will adhere. The application is thus easily managed. Seal in with cotton saturated with sandarac varnish.—S. ESCHELMAN, *Dental Cosmos*.

Arsenical Dressings.—Cement should be used for sealing an arsenical dressing in a cavity, as by its use pressure upon the exposed pulp can be better avoided, and its use also prevents the patient from removing the dressing in case the tooth aches. Allow it to remain in place from two to seven days, according to the location of the tooth, the depth of the cavity, the health and age of the patient, etc.—J. P. BUCKLEY, *Dental Review*.

Arsenical Applications.—In making an arsenical application rinse out the cavity with a warm antiseptic solution for a minute or more, using compressed air as the force, and dry the cavity by means of hot compressed air and alcohol. Always use freshly mixed paste, and except in case of a dying pulp or pulp-stones, no pain follows.—W. A. HECKARD, *Indiana Dental Journal*.

Arsenical Applications.—In the case of posterior teeth in the mouth of an adult, if there is no possibility of the arsenic reaching the gum tissues, I do not care to see the patient in less than three or four days. In the anterior teeth remove the pulp in thirty-six to forty-eight hours, as there would be less liability of discoloration of the dentin.—K. P. ASHLEY, *Western Dental Journal*.

Arsenical Pulp Devitalization.—

Acidi arsenosi (finely powdered)	3i
Cocain hydrochlor	grs. ii
Acidi tannici	grs. vi
Carmine	q. s. (gr. i)

Then soak a piece of bibulous paper in creosote and take a portion from the base of the bottle. The creosote causes the drug to penetrate more deeply into the pulp tissue.—FREDERICK LONNON, *British Dental Journal*.

Arsenical Applications.—Arsenic cannot act if the avenues of penetration are obstructed with disorganized matter. In order to obtain perfect results from an application of arsenous acid, the cavity in which it is placed should be perfectly dry and clean; otherwise it will simply act as an irritant and will cause much suffering.—*Dental Register*.

Pulp Devitalization.—Use a seventy-five per cent. solution of nitrate of silver, holding it against the exposed portion for a few seconds. It is a strong coagulant and will enter the pulp some distance, when cocain can be injected hypodermically.—H. C. REGISTER, *International Dental Journal*.

Pulp Devitalization with Arsenic.—When pulp exposure occurs in a cavity extending far under the gum, mix cotton with arsenic, cloves, morphin, and oil of cinnamon; cut the cotton into fine pieces, apply a little bit, and cover with gutta-percha and wax. This cannot ooze.—E. A. BOGUE, *International Dental Journal*.

Pulp Paste.—It has been suggested to add to nerve paste, so called, or devitalizing paste, *adrenalin*, in order to control the tendency to swelling of the pulp, which causes the pain usually experienced from applications of arsenic.—*Dentist's Magazine*.

Hemorrhage and Pressure Anæsthesia in Pulp Devitalization.—When a pulp is devitalized by pressure anæsthesia the hemorrhage should not be checked until it ceases entirely or inflammation of the periapical tissues will result.—I. W. BEACH, *Dental Cosmos*.

Pulp Devitalization.—Dip a pledget of cotton in carbolic acid; with it take up the arsenic, and lastly crystals of chloretone, and apply to the exposure, sealing in as desired. The patient will be comfortable while the devitalization process is going on.—J. T. DEGEL, *Dental Review*.

Devitalization of Inflamed Pulp.—Wash out the cavity and seal it lightly over a dressing of oil of cloves. At the end of twenty-four hours you will find the inflammation has subsided and the pulp ready for the devitalizing agent.—S. B. LEWIS, *Indiana Dental Journal*.

Pulp Devitalization.—Induce anæsthesia by the use of cocain and suprarenalin, mixing and using any dilutant, as water, chloroform, or oil of cloves.—T. E. PURCELL, *Western Dental Journal*.

PULP EXTIRPATION

Opening into a Putrescent Tooth.—Don't go into a putrescent tooth with any instrument, without first making the tooth, cavity and the instrument sterile with medication, without attempting any mechanical work other than to enter the pulp-chamber. Apply the rubber-dam and dry the cavity and then cover the pulp-chamber with forty per cent. formalin on a bit of cotton; seal hermetically with the best cement and leave it for twenty-four hours.

Even though the tooth is sore to the touch, such a treatment will take care of it and in eighty per cent. of cases will give a pulp-chamber free from odor, and freedom from bacilli.—*DR. FERRIS, Items of Interest.*

Pulp Extirpation.—Where the canals of molars are likely to be small, or flat, or tortuous, desensitize the pulp by means of cocain, usually by pressure, remove a little of it and apply devitalizing fibre moistened with oil of cloves, placing a few small crystals of cocain on the complete exposure, and cover without pressure. The result is universally devitalization without discomfort. Follow by a dressing of tannic acid in glycerin, which so hardens the pulp that it can be drawn out from a canal from which it could not be removed were cocain alone used.—*W. A. PRICE, Dentists' Magazine.*

Removal of Live Pulp.—Use a solution of cocain hydrochlorate in alcohol and ether. This solution, owing, perhaps, to an increased capillarity over the fluid in the dentinal tubuli, obtunds thin layers of dentin so that they may be removed or drilled through. Apply the solution again as soon as the slightest sensation appears, until the pulp is reached without pain. After gaining access to the pulp, a few cocain crystals dissolved in the blood that follows puncture, and carefully pumped into the canal with a broach, obtunds the remaining fibres.—*P. M. WILLIAMS.*

Painless Pulp Extirpation.—In that stage between normal and dead pulp when the pulp is devoid of blood but the nerve functions still persist, semi-putrescence existing, the pulp must first be thoroughly antisepticized. Then apply a minute quantity of paste of one part arsenic and three parts cocain, moistened with creosote. After twenty-four or thirty-six hours remove the dressing, saponify with sodium dioxid all fatty ducts in canals; wash and dry with alcohol and warm air. If there still remains any vital tissue in the apical region, apply cocain and adrenalin.—*CLYDE DAVIS, Dental Summary.*

Punctured Roots.—Curet the canal well of all gum; make the entire canal straight and conical, and while it is wet press in a plug of warmed high-fusing gutta-percha until it absolutely conforms to the shape of the canal. Remove the plug, wash it in alcohol, wash the canal thoroughly with peroxid of hydrogen, and dry. Place a little iodoform or aristol paste in the tip, slightly moisten the sides of the gutta-percha plug with oil of cajuput and press it firmly into the canal. The paste will close the apical foramen, and the hard gutta-percha will seal the opening of the puncture without any tendency to protrude through into the pericementum.—JOSEPH HEAD, *Dental Digest*.

Painless Pulp Removal.—Living pulp possessing all its physiological functions, and not having previously received escharotic treatment, may be painlessly removed as follows: Apply to the pulp a pellet of cotton saturated with hydrochlorate of cocain in 90 per cent. alcohol. Absorb excess of alcohol, dry with hot-air current and stop the cavity with gutta-percha, compressing the cotton upon the pulp. After ten minutes the anæsthetized pulp may be painlessly removed.—H. RODIER, *La Revue de Stomatologie*.

Guides to the Entrance of Root-canals.—Without rubber-dam, excavate cavity, flushing freely with medicated water, finding and opening entrance to canals. Adjust rubber-dam, dry cavity, and force copper or wood points into the entrance of canals. With pegs in place, insert temporary stopping, filling the cavity. Remove the pegs, thus leaving a funnel guide to the root-canals. After each subsequent treatment, close entrance to guides with small piece of temporary stopping.—J. AUSTIN DUNN, in *Dental Review*.

Gaining Access to Pulp.—Grind away the overhanging walls with sharp, keen-grit carborundum points kept wet with water. Mold them as needed from new carborundum, softening a small piece and placing it on a mandrel and passing it through the flame of the spirit lamp till the shellac is partially melted; then mold it deftly between thumb and

finger, and while yet soft, place in hand-piece and revolve under light pressure to true up. Such a carborundum point does not heat or jar the tooth as much as the steel bur, and grinds enamel faster than a bur will chip it.—C. H. TILLOTSON, *Dental Digest*.

Opening Up a Dead Tooth.—Do not attempt to remove all of the debris at the first treatment, but only sufficient to permit placing a piece of cotton saturated with a mixture of iodine and creosote, sealing it in for twenty-four hours. The ammonia and the alkaloids always present in decaying animal matter will both be decomposed by the iodine, the presence of the creosote preventing further decomposition.—THOS. L. GILMER, *Dental Review*.

Removing a Congested Pulp.—A congested pulp in an anterior tooth is best removed by using crystals of cocaine. Dry the cavity thoroughly and partially fill with powdered cocaine. Then puncture the pulp with a sharp instrument, letting the serum saturate the cocaine. Force this back into the pulp tissue, anæsthetizing it, so that it can always be removed without the least pain. If hemorrhage is not too profuse, fill at once.—J. P. BUCKLEY, *Dental Review*.

Removal of Pulp with Calcific Formations.—In case of failure to anæsthetize a pulp with cocaine and pressure anæsthesia, due to calcific formation in the pulp, I have obtained good results by the application of sulphuric acid. Make the application for a few minutes, then wipe out the cavity with sodium carbonate and many times you will then be able to anæsthetize the pulp.—GEO. W. COOK, *Dental Review*.

Pulp Removal.—In cases of pulp removal by pressure anæsthesia, where there is the slightest doubt about the complete removal (the parts being insensible and consequently no painful sensation as a guide), use the Schreier paste, sodium and potassium, which not only acts as a disinfectant, but will destroy any remnant of pulp.—R. OTTOLENGUI, *Dental Digest*.

Removal of Devitalized Pulp.—If there is reason to believe that minute fragments of pulp-tissue remain near the apex, dry the canal and fill with a twenty-five per cent. solution of hydronaphthol in alcohol, and with unvulcanized rubber exert enough pressure to saturate the remaining tissue. Then dry the canal, moisten with eucalyptus, and fill with gutta-percha points.—HAROLD CLARK, *Dominion Dental Journal*.

Pulp Removal.—To harden the contents of root-canals and facilitate their removal after disintegration with arsenic, saturate a piece of cotton or spunk with a five per cent. solution of formalin and place over the stump after removal of the bulbous portion of the pulp, being careful in multirooted teeth to have the cotton large enough to cover all of the stumps. Over the cotton place a Teague disk and place temporary stopping or cement over the disk. Three days will effect complete devitalization and hardening.—JOHN I. HART, *Dental Cosmos*.

Root Perforation.—If the perforation is accessible, the opening may be closed by first thoroughly drying the cavity, then placing over it a small piece of moistened court-plaster. Holding this in place with a pledget of cotton until it is dry and has adhered, the canal can be filled with zinc phosphate without danger of disturbing the patch or of forcing the cement through the opening.—S. H. GUILFORD.

To Open Up Teeth in Perioementitis.—With small stone grind a pit at the point at which you wish to enter with drill. The latter will then run smoothly and penetrate more easily, avoiding the shock caused by the revolutions of the drill. Keep point of drill well lubricated with oil of turpentine or glycerin.—R. E. SPARKS, *Dominion Dental Journal*.

Alcohol in Putrescent Root-canal Treatment.—Alcohol has a solvent action upon the putrescent material in root-canals as well as a decided restraining influence on the development process of bacteria.—GEO. W. COOK, *American Dental Journal*.

Pulp Removal.—Dip a small piece of spunk into a mixture of 5 parts alcohol and 1 part formaldehyd, then into finely pulverized cocain. Place over the exposed pulp and press gently with a ball burnisher over a piece of unvulcanized rubber. The formaldehyd toughens the tissues causing the pulp to shrink, making its removal easier.—DR. WESSELS, *Western Dental Journal*.

Pulp Removal.—The important point to remember in opening of a cavity in a tooth containing a dead pulp is the danger of forcing infected pulp detritus through the end of the root; consequently it is important to bathe the interior of the pulp-chamber with a 10 per cent. solution of formaldehyd before instrumentation is begun.—M. L. RHEIN, *Dental Digest*.

Mechanical Root-canal Cleansing.—Apply rubber-dam; drill used only to open mouth canals. Soak up liquid contents of canal; flood with 20 vol. solution hydrogen peroxid, and gently rake upward with bristle, avoiding piston action. Bubbles of gas form and bring debris to surface. Dry out, and repeat until gas ceases to come away.—JOHN ACKERY, *Dental Record*.

Sensitive Pulp Remnants.—When sensitive tissue is found in root-canals after removal of pulp, insert the point of any fine hypodermic needle and force in a few drops of chloroform. The tissue can then be extracted without pain, though previously the sensitiveness may have been so great as to make entrance with a broach impossible.—WILSON ZERFING, *International Dental Journal*.

Enlarging Root-canal.—This serves a three-fold purpose; it renders the introduction of dressings, medicaments and fillings an easy matter; it cuts away the zone of dentin in which disintegration of organic matter and consequent infection may have occurred; it opens the mouths of the tubules ready for any medication that may seem necessary.—J. R. CALLAHAN, *Indiana Dental Journal*.

Pulp Removal.—It is my conviction that there is often more probability of trouble in the disturbance of tissues at the apex by instruments or chemicals than if a small portion of pulp has been left undisturbed. Tissues once impaired by traumatism are never again so resistant to infection as they were originally.—A. E. WEBSTER, *Dental Cosmos*.

Painless Pulp Removal.—Using a glass barrel syringe with glass piston, without needle, simply a canula, packing gutta-percha around the nozzle to prevent escape, inject equal parts chloroform and carbolic acid. The pulp can immediately be twisted out, blanched white and insensible to pain.—*International Dental Journal*.

Root-canal Cleansers.—The smooth jewelers' broaches can be bought very cheaply by the dozen. Numbers of these, wrapped each with a wisp of bibulous paper and kept always ready in the bracket drawer, will be found a great convenience.—HOWARD T. STEWART.

Removal of Live Pulp When the Tooth is Very Badly Broken Down.—In the use of cocain with pressure, if the tooth is very badly broken down, a thin matrix of German silver can be fitted closely and the dam applied over that. The cocain will then not be forced out of the tooth, but is carried directly to the pulp.—DR. CROSBY, *Dental Digest*.

The Drill in Root-canals.—Wet dentin presents greater difficulties in the use of the Gates-Glidden drill than dry dentin. More failures in the use of the drill are attributable to wet dentin than to any other cause: more broken drills are due to wet dentin than to carelessness in handling.—J. R. CALLAHAN, *Indiana Dental Journal*.

Removal of Devitalized Pulp.—Devitalize with arsenic and remove bulbous portion. Place over the stump a pledget of cotton saturated with four per cent. formalin. In three days the remnants can be removed with pliers, coming out in one piece like a tough string.—*Dental Register*.

Pulp Extirpation.—Where immediate extirpation is intended, if a pellet of cotton is placed over the rubber in the cavity a much better pressure can be obtained, as the cotton prevents the rubber from spreading so much under the instrument.—W. A. BROWNLEE, *Dominion Dental Journal*.

Reaming Out Root-Canals.—Many hold that it is unnecessary to ream out root-canals, but the fact that roots that have been so treated display a remarkable freedom from subsequent septicity is a strong argument in its favor.—WM. GUY, in *The Dental Record*.

Extirpation of Live Pulps.—Using ethyl chlorid to anæsthetize the dentin enables one to go in with the drill and uncover the pulp painlessly. When the pulp is reached use cocain.—K. P. ASHLEY, *Western Dental Journal*.

Removal of Devitalized Pulp from Root-canals.—Adjust rubber-dam. Apply sulfuric acid—a 40 or 50 per cent. solution—directly over opening into canal. The pulp becomes rigid, shrinks, and its removal is a comparatively easy task.—A. H. MEBES, *Dental Digest*.

Perforation from Canal Drill.—If the perforation is of recent date, use a soothing antiseptic and over the opening place a layer of tin-foil, against which insert amalgam.—E. A. PEAKER, *Dominion Dental Journal*.

Pulp Extirpation.—Adrenalin chlorine is invaluable in pulp extirpation. The mere placing in contact with an exposed pulp cleans up the surface and reduces inflammation at once.—T. E. BARKER, *Dental Hints*.

Punctured Roots.—To cover the opening in a punctured root lead is preferable to platinum, using just enough to cover the opening, cementing the disk in position.—J. T. CRAWFORD, *Dental Digest*.

Painless Removal of Pulp.—A combination of one-eighth grain of cocain and one drop carbolic acid, applied to the pulp, will enable me to remove it after five minutes without a particle of pain.—DR. CORMANY, *Dental Digest*.

TREATMENT OF ROOT CANALS

Treatment of Putrescent Pulp.—Adjust rubber-dam and sterilize all included teeth, using either a ten per cent. solution formaldehyd to which a small amount of borax has been added, or a 1-500 solution mercury bichlorid in cinnamon water. Then bathe the teeth in alcohol and open freely, exposing all the pulp canals, and place over the mouth of each a small pledget of cotton carrying equal quantities of cresol and formalin sealed in hermetically, preferably with a quick-setting cement. Dismiss the patient for two or three days, or a week if more convenient. At the second sitting remove the dressing, cleanse the canals mechanically and gently work down into each canal a 1-500 solution of mercury bichlorid in hydrogen dioxid; dehydrate with alcohol and warm air, and place in each canal cotton carrying 2 parts cresol to 1 part formalin. Seal in and leave for at least three days, when the remedy will have sterilized the entire tubular structure of the dentin, thus establishing asepsis, when the canals should be thoroughly filled.—J. P. BUCKLEY, *Dental Cosmos*.

Aqua Regia in the Treatment of Putrescent Root-canals.—Nitro-hydrochloric acid (*aqua regia*) does not corrode a steel broach further than a thin coating on the surface, readily removed by cuttle-fish disk. In putrescent canals an effervescence is produced almost equal to that produced by hydrogen dioxid, carrying out and into the pulp-chamber the debris lodged in the canals. At the same time an elimination of free chlorin takes place, still further sterilizing and at the same time bleaching the tissue, leaving it nice and white after thoroughly drying out.—F. T. HAYS, *Dental Cosmos*.

Treatment of Septic Pulp Canals with Fistulous Opening.—Adjust rubber-dam and inject hot water into canals until all loosened debris is removed, absorbing overflow with bibulous paper. Dehydrate with Evans' root dryer; place cotton saturated with oil of cinnamon loosely in cavity; seal with gutta-percha, and dismiss for forty-eight hours. Repeat, if necessary. If exudation of pus is noticeable at fistulous opening, bur through to apical space and inject pyrozone through the canals till it traverses the fistulous tract, mechanically and antiseptically cleansing it. Then with hypodermic syringe inject oil of cinnamon till it oozes from the gum opening. Continue till pus formation, fetid odor and sensitiveness are eradicated.—W. V. McLEAN, *Dental Cosmos*.

Dressing for Root-canals with Fistula.—Make a piston of a broach wrapped with cotton, with which carefully force beechwood creosote through the canal till it appears on the gum. Then place in the canals a dressing of cotton saturated with the following: $\frac{1}{2}$ oz. iodoform; creosote q. s. to make a thin paste, to which add $\frac{1}{2}$ dram oil of cinnamon, which both disguises odor of iodoform and acts as a germicide. It is very rare that more than one application will be necessary. In very obstinate cases force chlorid of zinc (10 grs. to the oz.) through the canal till it appears at the gum. Follow with dressing above.—H. C. GILCHRIST, in *Items of Interest*.

Sterilization of Root-canals, Abscess, Cavities, etc.—The soluble metal electrode offers a convenient method of sterilization. An elongated zinc bulb is mounted upon an insulated handle and inserted into the cavity. The action of the current is an electrolysis of the metal, and a generation of zinc chlorid, which is conveyed into the tissues. Dr. Geo. B. Massey suggests that the zinc be coated with mercury, generating and depositing the chlorids of both mercury and zinc. In small root-canals a fine gold wire coated with mercury may be used.—J. M. FOGG, *Dental Cosmos*.

Formaldehyd in Root-canal Treatment.—I have been using formaldehyd for over two years. I have seen no deleterious effects but have seen apparently good results. In the ordinary dressing of root-canals use 3 per cent.; in case of large foramen, only 2 per cent. I have used 6 per cent. with very good results where I had reason to believe the foramen was small and I desired to get prompt results. I have, in a number of instances, applied 10 per cent. to the putrescent contents of a canal without any injurious effects; of course, by the time the formaldehyd has permeated the mass of putrescent matter and reached the apical foramen its strength is very materially reduced.—WM. ERNEST WALKER.

Root-canal Treatment and Filling.

- | | |
|-------------------------|---------------------|
| (1) Hydronaphthol | 20 grains |
| Alcohol | $\frac{3}{4}$ ounce |
| Oil of cloves | $\frac{1}{4}$ ounce |

Mix.

- | | |
|-------------------------|---------|
| (2) Hydronaphthol | 1 part |
| Oxid of zinc | 2 parts |

Having removed the contents of canal and cleaned to the apex, wash with (1). Make a paste of (2) with (1) and fill the canal. Mix (2) with glacial phosphoric acid, making a hydronaphthol cement, with which fill pulp chamber. Paint gum with iodin and aconite, equal parts.—H. S. MANN, *Dental Summary*.

Sulphuric Acid in Root-canal Cleansing.—A 40 per cent. solution of commercial sulphuric acid in water will give the best results in the majority of cases. If stronger than 50 per cent. it has a tendency to disintegrate the cotton on which it is most convenient to introduce it. With a drop or two at the entrance of the canal use a new broach, pumping it with the canal; this pares away all rough places, and disintegrates the inorganic constituents of the dentin with which it comes in contact.—J. R. CALLAHAN, *Indiana Dental Journal*.

Root-canal Treatment.—Having prepared the canal by the removal of all septic matter, pack with pellets of cotton, dipped in water, and then into finely pulverized crystals of nitrate of silver. Close with temporary stopping and dismiss for a week or two, when the nitrate of silver will have penetrated the dentin and rendered the root thoroughly aseptic.—L. G. NOLL, *Miss. Den. Ass'n*, 1898.

Treatment of Septic Root Canal with Fistulous Opening.—After cleansing, flood canals with creosote; place a ball of cotton saturated with creosote at orifice of canal; fill tooth with unvulcanized rubber; press hard on the rubber with ball-ended burnisher so as to force the creosote through the fistulous opening. If it does not flow through, mix it with glycerin. Fill cavity tightly with temporary gutta-percha and leave alone for at least three days. When the fistulous opening has healed or shows signs of healing, complete the cast.—WM. CASS GRAYSTON, *Dental Record*.

Antiseptic Treatment of Putrid Root-canals.—Open up and cleanse pulp chamber and root-canals of all putrid matter. Then introduce formaldehyd on shreds of cotton and evaporate with a heated silver wire. Repeat two or three times at same sitting; then introduce a temporary dressing of cotton shreds saturated with formaldehyd and essence of geranium; close air-tight with wax or gutta-percha. Repeat after two or three days. When the odor is sweet and pure fill permanently.—*Am. Den. Weekly*.

The Treatment of Putrescent Root-canals.—The contents of the canals should be as nearly sterile before removal as the use of antiseptics will make them. For this use formalin, following with an alkali, such as hydrogen-dioxid or sodium-dioxid, which, in contact with decomposed organic matter, cause a chemical reaction with effervescence, leaving the debris in condition to be easily washed out. Then dehydrate with alcohol and hot air.—A. F. STRANGE, *American Dental Journal*.

Formaldehyd in the Treatment of Putrescent Root-canals.—For the treatment of putrescent root-canals André and de Marion have recommended equal parts of forty per cent. formaldehyd with forty per cent. absolute alcohol, and half as much essence of geranium, two or three applications of which will entirely remove unpleasant odors and entirely disinfect the root. If carbolic acid is also to be used, use it first and allow two or three minutes to elapse before using the above, when the result will be admirable.—E. A. BOGUE, *Dental Cosmos*.

Pulp-canal Cleansing.—

Formic aldehyd	40 parts
Essence of geranium.....	20 parts
Alcohol, eighty per cent.	40 parts

This formula has resulted from a long series of carefully conducted experiments undertaken with the purpose of utilizing the valuable properties of formaldehyd in treating putrescent conditions of the pulp-canal and its surroundings safely, efficiently, and with the least discomfort to the patient.—*British Journal of Dental Science*.

Root-canal Sterilization.—For immediate root-filling sterilize with formaldehyd, forty per cent., full strength, but take care not to saturate, simply moisten and wipe out the canals so as not to have any excess. Thoroughly dry the canals before filling with gutta-percha to the apex.—F. D. GARDINER, *International Dental Journal*.

Pulp-canal Treatment.—The canal is flushed with camphophenique in which thymol has been dissolved in the proportion of forty grains to the ounce. A gutta-percha point, fastened to the end of the root plugger by heating the point and pressing it gently to the large end of the cone, is dipped into camphophenique and then into iodoform powder, and forced to place in the canal.—J. LEON WILLIAMS, *Dental Cosmos*.

Treatment of Putrescent Roots.—With Callahan's sulphuric acid method, but with sodium peroxid substituted instead of sodium bicarbonate, the chemical interchange will result in peroxid of hydrogen and sodium sulphate. The newly formed peroxid of hydrogen will bleach the tooth and by evolution of gas throw out any material present. The sodium sulphate will saponify the fatty material and the root be left in a perfectly clean and sterile condition.—H. PRINTZ, *Western Dental Journal*.

Trichloroacetic Acid.—This is an excellent treatment for pyorrhœa as it arrests the formation of pus quickly. It acts like a charm in putrescent pulp canals. Carefully applied to spongy gums, it gives good results. It is also excellent in pericementitis arising from calcic deposits. Because of its astringent and escharotic action it destroys abnormal surface tissue and resuscitates it after a single application.—*Dental Brief*.

Treatment in Case of Acute Forming Abscess.—Open, if possible, through the pulp-canal; otherwise lance and open through the bone, using antiseptics, such as oil of cloves, creosote, or Black's 1, 2, 3. For the relief of pain, hot foot-bath, hot water to the face, Dover's powder five to fifteen grains, and five to thirty grains iodid of potash, to control the pus formation, and eliminative agents to carry away the poison.—ELGIN MAWHINNEY, *Dental Review*.

Dressing for Pulpless Teeth.—Creasoform, a light green powder, without smell or taste, soluble in alcohol and ether, and which decomposes in contact with animal tissues into creosote and nascent formaldehyd, is useful as a dressing for pulpless teeth; make into a paste with any of the essential oils.—B. J. T. BENNETTE, *Dental Record*.

Treatment of Root-canals with Putrescent Pulp Contents.—Oxidize the contents of the canals with permanganate of potash, inserting a small crystal and waiting for it to decompose the organic matter present. Cleanse carefully,

following with aristol and oleum gaultheria when pus is not present. If pyemic conditions exist, precede the aristol with zinc chlorid 5 to 10 grains to 1 dram water, or formalin 5 per cent. solution.—LOUIS JACK, *International Den. Jour.*

The Treatment of Inaccessible Canals.—By the use of sodium dioxid this question was to me solved years ago. A treatment which can remove all putrescent matter from the tubuli of the dentin to their ends meets with no difficulty whatever in these ever-so-fine canals, which, while no instrument can trace or even find them, are still much larger than any dentinal tubuli can be, and so they are cleansed and sterilized too.—C. J. PETERS, *Items of Interest.*

Formalin in the Treatment of Root-canals.—Besides its germicidal and tannifying properties, which make it a valuable agent in the treatment of root-canals, formalin possesses a third property, seldom considered, which contributes largely to its value—that is, its volatility. It expands at ordinary temperature and goes beyond the apex, bringing about sterilization of the canal and of the periapical region.—*Dental Cosmos.*

Root-canal Treatment.—Open up and clean thoroughly at the first setting and pump pure carbolic acid through, if possible, into the abscess or fistula, as the case may be, and enough to do the work. Stop the canal with a rope of cotton dipped in carbolic acid and xeroform; fill cavity with gutta-percha and wait a week or ten days, or two weeks, or two months, as the case may be.—S. C. G. WATKINS, *Dental Cosmos.*

Root-canal Treatment.—After removal of putrescent root-canal contents, thorough cleansing, and dehydration, use an antiseptic dressing, oxpara, a composition of formaldehyd, thymol, burnt alum, and creosote, consisting of a powder and a liquid which should be mixed to a creamy consistency and inserted on a few threads of cotton or bituminous paper.—A. F. STRANGE, *Dental Summary.*

Hydronaphthol in Root-canal Treatment.—In the treatment of a putrescent pulp canal use hydronaphthol-alcoholic solution 25 per cent. The penetrating property of the alcohol and its affinity for moisture carry it, laden with the hydronaphthol in solution, to the remotest nook and corner of the pulp-chambers and canals, however small, even to the apex and through the soft tissues, as well as into the tubuli. The alcohol evaporates, leaving the hydronaphthol to do its useful work of disinfection. It is powerful as a lion, cunning as a serpent and harmless as a dove.—S. S. STOWELL, *Dental Cosmos*.

Treatment of Root-canals.—Use the Donaldson broach, sulphuric acid, and, in favorable cases, the engine reamer to clear the canal. In disinfecting rely on hot air, hydrogen dioxid and iodoform in ether. In filling use gutta-percha points for all large canals; for the smaller ones, a mixture of zinc oxid, carbolic acid and iodoform, forcing it into all the recesses possible.—T. W. ONDERDONK, *International Dental Journal*.

Root-canal Sterilization.—First. Thoroughly remove all pulp debris by broaches, wrapped with fibers of cotton. Second. Disinfect with 95 per cent. carbolic acid and dry the canal. Third. Flood the canal with absolute alcohol and evaporate with hot air until thorough desiccation is obtained. The rubber-dam is indispensable.—JNO. S. MARSHALL, *International Den. Jour.*

Root-canal Treatment.—My root-canal fillings are of pink gutta-percha because of the color which can be traced in drilling for a post, or in case of removal, this is dissolved in chloroform, cajeput, and eucalyptus, with the addition of hydronaphthol, oil of cassia, and iodoform. This is always heated in a water-bath just previous to using, to render it of a creamy consistency, and is pumped in with a smooth broach; a point of gutta-percha is also inserted and left as a hard centre of the root-filling.—CHAS. E. PARKHURST, *Intental Dental Journal*.

Sodium Peroxid in Dead Teeth.—Sodium peroxid in its action combines the properties of sodium hydrate and of hydrogen peroxid; fat-saponifying, albumen dissolving, sterilizing and bleaching, or union of the properties of kalium natrium and pyrozone, possessing all the essential features for the treatment of the interior of dead teeth.—H. H. BURCHARD, *Dental Cosmos*.

Essentials to Success in Root-treatment.—*First*, the rubber-dam; *second*, free access; *third*, thorough cleansing, medicinal and antiseptic; *fourth*, getting the antiseptic through the root; *fifth*, perfectly filling the root (immediately after getting an aseptic condition) with an antiseptic root-filling; *sixth*, sufficient confidence in the method to insure thorough work, and the minutest attention to details.—F. MILTON SMITH, *International Dental Journal*.

Root-canal Treatment.—Inject 1-1000 bichlorid sol. through root until canal and abscess seem clean. Wrap a little cotton on a fine broach, dip in 40 per cent. sol. sulphuric acid and work up and down canal a few times, followed by a saturated bicarbonate of soda solution. Then bichlorid again until no stain on cotton appears. Make solution chlorid of zinc, 40 grains to 1 oz. water, and inject in abscess sac. Leaving root moist, mix oxychlor. zinc and bichlor. m. sol. to consistency of cream and pump in canal. When crystallized, fill the cavity.—V. M. MURIER, *Dom. Den. Jour.*

Drying out Root-canals.—If a chip blower is heated over an alcohol lamp, the air taken in from the alcohol flame is converted into formaldehyd gas, the best disinfectant; hence the advantage over an electric hot-air syringe.—HOMER ALMON, *Dental Review*.

To Expedite the Treatment of Putrescent Root-canals.—As a source of gratifying results, use a dressing composed of equal parts of alcohol, formalin, and beechwood creosote.—CHARLES E. SLAGLE.

Electrolysis in Sterilizing Root-canals, Abscess Cavities, etc.—A soluble zinc electrode, mounted upon an insulated handle, is to be inserted into the cavity, the action of the current generating zinc chlorid. If the zinc electrode is coated with mercury the chlorids of mercury and zinc will both be deposited. If a fine gold wire coated with mercury is used as an electrode, only the mercury will be acted upon by the current.—J. M. FOGG, *Dental Cosmos*.

Root-canal Treatment.—When the pulp is found exposed, vital or partially so, spray with chlorid of ethyl; remove; cleanse canal and dehydrate as follows: Wipe well with Ceylon oil of cinnamon and throw hot air upon it for a few moments to vaporize the medicament and cause it to permeate the dentin, rendering the canals and apical space aseptic.—W. T. McLEAN, *Dental Cosmos*.

Peroxid of Sodium.—In the treatment of septic pulp canals, the use of the dry powder of peroxid of sodium overcomes the objection to using the solution, which is very difficult to make. Dip a dry broach into the powder and work it into the canal. Saturate with five per cent. sulphuric acid; effervescence will force out all débris.—F. H. LEE, *Dental Digest*.

Treatment of Canal After Pulp-removal.—If infection at the apex is suspected, treat with sulphuric acid and sodium dioxid, and seal in the tooth for a few days oil of cloves containing one per cent. of formaldehyd. If there is no soreness at the next sitting, proceed to fill.—HAROLD CLARK, *Dominion Dental Journal*.

Root-canal Sterilization.—Wash out first with neutral peroxid of hydrogen (or pyrozone); second with cinnamon or peppermint water. Dry and introduce strand of cotton or silk wet with myrtol. Seal in for one or two days. Prevent ingress of saliva or water and fill.—A. W. HARLAN, *Ohio Den. Journal*.

Treatment of Root-canals.—Never enter a doubtful canal, even with an instrument that you feel sure is sterile, without first dipping it in the Schriell compound (sodium and potassium). It is a sterilizing agent for the instrument as well as for the tooth.—R. OTTOLENGUI, *Items of Interest*.

Liquid Medicaments in Root Canal.—Flood the canal with the liquid, introduce a Downie broach and revolve it the wrong way; the blade of a broach will operate like the screw propeller on a steamboat.—*Dental Office and Laboratory*.

Root-canal Treatment.—When canals are so small that it is impossible to penetrate them with the finest bristle, I say let them alone. Such canals are too small to give any trouble by infiltration of moisture.—OTTO MARX, *Ohio Dental Journal*.

Nitrate of Silver in Root-canal.—When it is desirable to introduce nitrate of silver into a root-canal, heat a platinum wire and dip it in the crystals. They will adhere and may be carried to any point desired.—J. F. STEELE.

Carbolic Acid in Root-canals.—After the removal of a pulp the use of carbolic acid in the canal will aid nature in closing up the apical foramen. There is nothing like sterilized coagulated albumen for the protection of the periosteal or pericemental tissues.—J. Y. CRAWFORD.

Pulp Treatment.—The stearate of zinc, with aristol and oleate of zinc and iodol, are excellent agents for pulps which need stimulating treatment; then capping when an effort is being made to save the pulp, as in young teeth.—VIDA A. LATHAM, *Dental Digest*.

Electro-sterilization of Root-canals; Chlorid of Zinc.—Seal the apex, fill canal with pyrozone, add a small amount of chlorid of sodium, place zinc wire electrode in the moistened canal, turn on current.—M. L. RHEIN, *Ohio Den. Jour.*

After Pulp Removal.—That annoying particle of sensitive tissue at the apex of the root can ordinarily be removed by pumping carbolic acid and chloroform into the root with a smooth broach.—CHAS. E. PARKHURST, *International Dental Journal*.

Root-canal Sterilization.—Put a minimum portion of sodium peroxid in the canal and cover over with gutta-percha. After twenty-four hours wash out with dilute sulphuric acid, followed by bicarbonate of soda.—C. N. PEIRCE, *Ohio Den. Journal*.

Glycerol of Thymol.—Glycerol of thymol acts admirably as a preservative if left at the bottom of a well-cleaned root-canal when ready for filling.—DR. BOGUE, *Dental Cosmos*.

Root-canal Filling.—The best quality of beeswax coaxed into the roots with a hot instrument has been used by me with very satisfactory results for many years.—B. F. ARRINGTON, *Dental Digest*.

Iodoform in Root Treatment.—If iodoform be used in root treatment, put a tonquin bean in a small bottle of the drug; this, to a great extent, will obviate its unpleasantness.—H. LEONARD DORRELL, *The Dental Record*.

ROOT CANAL FILLINGS

Root-canal Filling.—Dissolve five or six grains of aristol in chloroform, with which make your chloro-percha, dipping your gutta-percha points in the same solution. This makes an antiseptic, non-irritating root-canal filling which will keep the tissues in a normal, healthy condition. Before inserting, displace the water in the canal with oil of eucalyptus, flooding the canal. The aristol and chloro-percha will then go to the very apex of even very fine canals, drawn by capillary attraction.—L. G. NOLL, *Transactions Mississippi Dental Association*.

The Gutta-percha Cone in Root-canal Filling.—The difficulty of root-canal filling is enhanced when there is a large open foramen, but this may be overcome by the use of a section from a long hand-rolled cone of gutta-percha, tapering from one-eighth inch in diameter to a point. As the cone is pressed into the canal the sensation produced will indicate that apical tissue is reached. Withdraw the cone and cut off the end, introducing it again and repeating the cutting until it can be introduced without sensation. Then cut off a little more and a section of suitable length on a flat-ended canal plugger by heating the plugger end; moisten the canal with eucalyptol or chloro-percha and anitol and introduce the cone, packing it gently to place.—O. E. INGLIS, *The Stomatologist*.

Root Filling.—Gutta-percha is a good root filling, and where roots are filled immediately after the removal of the pulp, as is sometimes necessary, it is an excellent plan to carry on a probe a small portion of powdered iodoform as near as possible to the root apex and then pack the gutta-percha on that. Iodoform is, clinically, antiseptic as well as anæsthetic, and hence is an excellent dressing for the stump of a removed pulp. The advantage of applying the iodoform before introducing the gutta-percha rather than with it is that if mixed with gutta-percha and heated the iodoform is likely to be decomposed and some of its good qualities impaired.—W. F. LITCH, *Dental Brief*.

Root-canal Filling.—Dry the root by means of chloroform of ether with chloroform in solution, then the hot point and hot air. Then introduce a gutta-percha point a little smaller than the canal, the point moistened with chloroform and having a bit of iodoform on the end. This is carried to the extreme end of the canal. Again use the hot air and soften the gutta-percha to a creamy consistency, and with pressure force to place, and the canal will be closed as well as can be done by the hand of man.—T. W. ONDERDONK, *International Dental Journal*.

Root-canal Filling; Weld's Chemico-Metallic Method.—

One of the metallic broaches, composed principally of zinc (97 per cent.), is to be dipped into the modified nitrohydrochloric acid, probably about one-fifth of a drop adhering; sufficient to destroy all the germs and coagulate the dead or semi-dead matter in the canal. The broach thus charged is immediately inserted in the canal, a slight nick having been previously made at a point corresponding with the depth of the canal. A slight bend or twist breaks off the point, leaving it in the canal, obliterating the space, while the concurrent chemical action acts as a powerful germicide.—L. N. SEYMOUR, *Indiana Dental Journal*.

Root-canal Filling.—The filling must reach the apex of the root; after it is placed it must not leak or absorb exudations from the nutritive fluids which are always present. If the filling does not occupy all the space originally filled with pulp-tissue, that portion unfilled will develop poisonous matter fatal to the life of the tooth or the comfort of the patient; new tissue is never built into the unfilled space, but it will be filled with the exudation of serum, which will ferment and putrefy and form gases, and by pressure originate inflammation in the apical territory, the limit being determined only by the amount of poisonous exudate formed and the vigor, or lack of vigor, of the forces of the animal economy of the individual.—J. D. PATTERSON, *Western Dental Journal*.

Immediate Disinfection and Root-canal Filling.—Remove all debris as thoroughly as possible; inject peroxid of hydrogen, repeating until not a single bubble appears, going through fistula if one exists. Dry thoroughly, and flood canals with bichlorid of mercury. Wipe out and bathe with eucalyptol, making that the vehicle for a considerable quantity of iodoform. Then dip fine points of gutta-percha in the solution of eucalyptol and iodoform, and fill the roots with them.—C. F. STOCKWELL, *International Dental Journal*.

A Metal Cone in Root-canal Filling.—Lengths of silver wire, of different thickness to correspond to the size of root-canals, are cut and the point made cone-shaped. These are roughened and covered with gutta-percha, making a gutta-percha point with core of metal. A curve or hook may be formed at the end of the wire which occupies the coronal portion of the cavity, to facilitate removal should this become necessary. Such a point will follow the root to the very end without turning up the point. Fill canal with chloro-percha before inserting point.—THEO. F. VON BUEST, *Items of Interest*.

Formalin Cement for Root-canal Filling.—

Powder.

Calc. of sulphur	200
Hydrag. bichlor	4

Mix finely.

Liquid.

Acid sulphuric	32
Formalin	100
Aq., distillate	100

Rub up a few drops of the liquid with sufficient of the powder to form a paste. Introduce into the dried root-canal. It solidifies in a few moments. No discoloring or corrosive effect.—ABRAHAM, in *Zahnärztliches Wochenblatt*.

Root-canal Filling.—Apply the coffer-dam; by the aid of the root-drier dry the canal, destroying any microörganisms that may have been left there. Flood the canal with eucalyptus, which, by imbibition, is carried into the dental tubules, any surplus being removed by the aid of cotton or other absorbent. Flood with chloroform, and work a broach back and forth in the canals as air bubbles escape. Work chloro-percha into the canal, withdrawing the broach gradually, leaving gutta-percha in its place.—J. H. WOOLEY, *Dental Review*.

Gutta-percha in Root-canal Filling.—For a canal which has been difficult to open, select a point longer than the canal, which cannot be pushed quite to the apical opening, and place it in the canal; dip the foil carriers in oil of cajuput and carry the drop which they will hold to the orifice of the canal; it will instantly run in. Catch the projecting gutta-percha and move it up and down; friction aided by the solvent action of the oil will make the point fit the canal accurately.—JAS. M. MAGEE, *Dominion Dental Journal*.

The Ideal Root-canal Filling.—Gutta-percha, combined with wood creosote, formaldehyd, iodoform and oil of cassia makes an antiseptic and ideal root-canal filling. These germicides remain forever active and every molecule of the filling is impregnated with these lasting germicides, which do not lose their medicinal qualities as do all root-canal dressings by being absorbed.—L. T. CANFIELD, *Dental Summary*.

Root-fillings in Molar Teeth.—Ordinarily the roots of first molars cannot be safely filled before eleven or twelve years of age, and second molars not before about sixteen. If pulps are painful or exposed before that time, every possible effort should be made to quiet and protect or cap them, so as to preserve them alive until their most important function—the completion of the roots—is fulfilled. Fortunately, the life of pulps is much more vigorous and persistent previous to this time, and efforts for their preservation more likely to succeed.—ED. NOYES, *Dental Review*.

Root-canal Filling.—Since a root-filling made by first moistening the canal with eucalyptol and then pumping chloro-percha into it, and into this forcing a gutta-percha cone, is the best resistant to moisture, and since oxychlorid of zinc is the best resistant to bacteria, a combination of these two materials would seem to make the best root-filling, gutta-percha being placed at the apex of the root-canal, and over this the filling of oxychlorid of zinc.—A. E. WEBSTER, *Dental Review*.

Root-filling.—Break up a box of gutta-percha stopping and put in a large-mouthed bottle of colored glass to exclude the light. Add enough chloroform to dissolve, and make a cream. Allow it to remain open until nearly all the chloroform has evaporated, then add oil of eucalyptus to make it like dough, and leave open for further evaporation. Then add enough powdered eucophen to bring to a consistency that can be lifted without running. Fill canal and follow with gutta-percha points.—T. MARSHALL WEAVER, *Ohio Dental Journal*.

Formaldehyd in Root-canals.—In cases where, after pulp devitalization, a remnant remains at apex of root too sensitive for removal, apply formaldehyd (Seininger's solidified) sufficient to one-third fill the pulp-chamber, spreading it over the openings to canals. Fill balance with cotton and seal with temporary stopping. After about three days the balance of pulp-tissue will be found lifeless and of leathery consistence. After removal and thorough cleansing, fill canals with a paste made by rubbing formaldehyd with vaselin and insert gutta-percha point.—F. B. LAWRENCE, *Western Dental Journal*.

Root-filling Material.—Gutta-percha base-plate, by weight, one-half ounce; saturate solution of thymol in eucalyptus, by measure. Dissolve the gutta-percha (one-half ounce) in chloroform, add the thymol and eucalyptus and mix thoroughly; then allow the chloroform to evaporate. Work into the canal with broach and force to apex with soft rubber and gutta-percha cone.—B. L. COCHRAN, *Dental Review*.

Root-canal Filling.—A deviation from the usual method of filling with chloro-percha and gutta-percha. A gutta-percha cone is first placed in the canal and then the chloro-percha is applied, dissolving the point; another point is then inserted and forced to place, insuring the complete filling of the root without danger of confining air in the canal.—J. J. WRIGHT, *Dental Digest*.

Aseptic Root-canal Filling.—Having thoroughly dried the canals and cleansed with alcohol, work in a paste of oil of cloves and aristol; if the paste is a day or two old it is better. If the canal is not thoroughly dry at the apex the alcohol will readily take up the moisture and also the oil of cloves and carry the paste to the ends of the root, sealing the apical foramen. Insert a gutta-percha point except in small canals.—G. R. GARD, *Dental Summary*.

Using Gutta-percha Points.—Gutta-percha points, as received from the manufacturers, have a provoking tendency to double upon themselves and refuse to find their way into a canal. This difficulty may be overcome by introducing into the point a flexible, smooth, and very sharp-pointed broach, this supporting it when carried into the canal. Hold the mass in the canal with a root-canal plugger when withdrawing the broach.—L. G. NOEL, *Dental Digest*.

Root-canal Filling.—Having thoroughly dried the canals with hot air pump to the apex of each root a thick creamy solution of chloro-percha in which has been incorporated a considerable amount of iodoform, which makes an excellent antiseptic dressing as well as a lubricant for the introduction of the gutta-percha points which form the bulk of the canal filling, forcing into each canal as many as is possible.—K. P. ASHLEY, *Western Dental Journal*.

Root-canal Filling.—Dr. Pruyn has recently adopted the method of filling canals with sandarac varnish and gutta-percha points, his theory being that the varnish follows the remaining alcohol used for drying out; the results seem very good, the varnish appearing to enter all the openings of the canaliculi.—J. M. WALLIS, *Dental Review*.

Root-canal Filling.—Paraffin and iodoform melted in with a copper wire in the form of the Donaldson broaches. The preparation is carried to the end of the roots by capillary action. By simply pressing cotton on it the filling will come away intact, showing the exact shape of the canal.—F. T. VAN WOERT, *Items of Interest*.

Root-canal Filling.—Free and easy access to the canals must be made, however much tissue has to be sacrificed. Be very careful to avoid perforation of the apex. Oxy-chlorid of zinc is by far the best material for filling root-canals, as it remains sweet and pure indefinitely. Charcoal is an exceedingly valuable filling, and as it is practically insoluble it ought to prove a permanent one.—T. WILSON HAGUE, *International Dental Journal*.

Root-canal Filling.—

Iodoform	90 grs.
Oxid of zinc	45 grs.
Pulverized charcoal	45 grs.
Oil of cloves	67 grs.

Does not solidify in the bottle and keeps indefinitely. At time of using mix with tincture of myrrh to the consistency of cement and carry to canal on asbestos fibre heated over a Bunsen burner flame, using an iridium platinum broach.—*Exchange*.

Root-canal Filling—Carbonized Cotton.—This porous, soft and flexible carbon, in itself a disinfectant, is also an excellent antiseptic, every fibre being impregnated with anhydrous boracic acid. All septic masses, which may appear in spite of careful treatment, are readily taken up by it and made harmless. It can be brought to red heat before using. No irritation ever results within the tooth, nor in surrounding parts.—ELOF FARBERG, *The Dentist*.

Root-canal Filling.—Dr. W. T. McLean recommends asbestos fibers, saturated with silver nitrate solution, protected with cement. The advantage of asbestos is not quite clear; silk or flax would answer as well. Fully saturated with silver nitrate they would not undergo any change in the tooth canal. There are other antiseptics as good as silver nitrate and which will not discolor the tooth.—J. TAFT, *Dental Cosmos*.

Root-canal Filling.—With rubber-dam in place dry the root thoroughly with Evans' root dryer, then fill with salol, finishing with gutta-percha point. As tested by roots imbedded in plaster this makes the most perfect root filling of all that I have tried. Salol has valuable antiseptic qualities, and no inflammation follows its use even if a little passes through the foramen.—R. C. YOUNG.

Success in Root-canal Filling.—Antiseptics used in canals in connection with other filling material such as gutta-percha, oxpara, oxid of zinc, etc., help to render the canals aseptic at the time, and to keep them so for longer or shorter periods, but eventually the success of the filling depends entirely upon the other materials used.—GEO. BROOKS, *American Dental Journal*.

Root-canal Filling.—Place equal parts salol and paraffin in the cavity; insert Donaldson broach in the canal, and by means of heated Evans root-canal dryer flow the salol and paraffin to the apex. It will follow the broach thoroughly to the most minute point; then quickly withdraw broach and insert a gutta-percha cone.—FRANK C. PAYNE, *Pacific Stom. Gazette*.

Root-canal Filling.—Having sterilized the canal with bichlorid of mercury 1-3000, convey to the apex a small portion of the powder of one of the cements mixed with beechwood creosote. Then, with mallet drive in a peg of sterilized orange-wood wrapped with a ribbon of Abbey's soft gold.—J. Y. CRAWFORD.

Immediate Root-filling.—When immediate root-filling is practiced my advice is use both cocain and arsenic, but use judgment before using either. But if you use pressure anæsthesia followed by immediate root-filling, look out for subsequent inflammation and pain, which, even if subsiding in twenty-four or forty-eight hours, is an entirely unnecessary infliction upon the patient.—J. P. ROOT, *Dental Brief*.

An Emergency Root-canal Filling.—In a case in which there was no opportunity for preliminary or subsequent treatment, an abscessed tooth was filled with gutta-percha, a tapered copper wire having been first inserted in each canal. After the filling was completed the wires were withdrawn, leaving a small opening for the escape of any gaseous or fluid accumulations which might form during an ocean voyage.—E. A. BOGUE, *International Dental Journal*.

An Ideal Root Filling.—As a filling for the roots of putrescent teeth there is nothing better than oxpara (a combination of formaldehyd, thymol, burnt alum and creosote) in combination with carbonized cotton, which is a good quality of absorbent cotton saturated with boric acid reduced to carbon in an air-tight retort. When dry it readily crumbles and is difficult to manipulate but in combination with oxpara it works easily and very satisfactorily.—A. F. STRANGE, *Dental Review*.

Metallic Root-canal Fillings.—It has been proved by experiments upon microbes that metallic silver in contact with microbes is attacked by certain of the toxines, probably of acid reaction, produced by them in their life-processes and death-decomposition, and that it is dissolved, making a compound that is very poisonous to the microbes. It is thus possible that metallic silver might be preferable to gold as wire used in root-canal filling.—DR. DAWBARN, *International Dental Journal*.

Root-canal Filling.—There can be no question that tin in the root-canal is as bland as it would be if encysted in the muscular tissue. Clinical experience has demonstrated that a root properly filled with tin will remain perfectly odorless, while one filled in the same manner with cotton and cement, or gutta-percha, almost certainly gives off a most offensive odor on being removed.—T. D. SHUMWAY, *Dental Digest*.

Root-canal Filling.—Combine sufficient eucalyptus and creosote to make a paste, and add a little iodoform, the odor of which will be much disguised. Wipe the canal with this dressing and pump in chloro-percha until full. Then insert a gutta-percha cone or point and fill pulp-chamber with cement. Fill cavity as desired.—R. E. LOUCKS, *Dominion Dental Journal*.

Eucalyptus Oil as a Root-dressing.—Having cleaned the canal as thoroughly as possible, with hypodermic syringe inject eucalyptus oil, the outflow washing out any *lébris* that may have been left. Fill by packing with fine asbestos fibre soaked in the oil; cap with osteo and fill as usual.—H. J. THOMAS, *Journal of the British Dental Association*.

Immediate Root Filling.—Immediate root filling should not be resorted to in case the pulp is removed by pressure anæsthesia. In case the canal is filled immediately, secondary hemorrhage, due to the reaction, causes an undue pressure in the apical space and is liable to set up an active inflammation or congestion of the peridental membrane.—E. T. LOEFFLER, *Dental Summary*.

Root-canal Filling.—After pulp extirpation wipe out canal with cotton dipped in a saturated solution of thymol in oil of cinnamon; fill canal with gutta-percha points dipped in the same solution. The oil of cinnamon evaporates, leaving the thymol in crystals along the walls of the root, forming with the gutta-percha points a very lasting antiseptic.—J. J. E. DE VRIES, *Items of Interest*.

Root-canal Filling.—There is no root-filling material in use which will prevent the passage of moisture and bacteria. Dependence must be placed on something other than the filling material, mainly the protective proteid bodies of the tissues, and therefore we should not do anything that will weaken their resistive power by drugs or instrumentation.—A. E. WEBSTER, *Dental Cosmos*.

Root Canal Filling.—After pulp removal under pressure anæsthesia I always leave a small quantity of mummifying paste (zinc oxid, alum and thymol) at the extreme end of the canal and then fill with gutta-percha points dipped in a saturated solution of thymol in oil of cinnamon. The cinnamon gradually evaporates, leaving a layer of thymol crystals, lining the root canal.—WILFRED E. GRIFFIN, *British Dental Journal*.

Combination Root-canal Filling.—By the use of gutta-percha at the foramen and oxychlorid for the balance of the canal we avoid the objectionable features of both materials, —*vis.*, the leakage in gutta-percha and the forcing of oxychlorid through the foramen. Used as stated, these materials practically combine more of the qualities of an ideal root-filling than can be obtained with any of the other materials generally used.—*Western Dental Journal*.

Charcoal in Immediate Root-canal Filling of Abscessed Teeth.—Finding it difficult to pulverize the charcoal points after introduction into the canal I have used thoroughly pulverized charcoal mixed with creosote with great success, and have as yet to record a single failure.—J. H. DARHAM, *Pacific Dental Gazette*.

Filling Root-canals.—I use the oxid of zinc and trit-cresol, adding carbonized cotton to thicken the paste, which makes the mixture more easily carried to place—not, however, without a good degree of patience and considerable perseverance. A gutta-percha cone, if desired, may be used to complete the filling.—GRAFTON MUNROE, *Dental Review*.

Pulp-canal Filling. Creosoted Charcoal Points.—In case of alveolar abscess, even with periostitis, clean and dry out the canals, apply oil of cassia and insert a creosoted charcoal point. Dismiss the patient for from three days to a week, when, as a rule, the cavity may safely receive permanent filling—a gold restoration, if called for.—E. R. TAIT, *Pacif. Med. Den. Gazette*.

Gutta-percha Cones in Root-canal Filling.—Moisten the canals with oil of eucalyptus and press to place the gutta-percha cone. If also applied after the cone has been placed in the canal, by employing a blast of warm air the gutta-percha can be easily packed into the canal. Use only enough to moisten the canal.—C. R. TAYLOR, *Dental Brief*.

Immediate Root-filling.—When immediate root-filling is practiced my advice is use both cocain and arsenic, but use judgment before using either. But if you use pressure anæsthesia followed by immediate root-filling, look out for subsequent inflammation and pain, which, even if subsiding in twenty-four or forty-eight hours, is an entirely unnecessary infliction upon the patient.—J. P. ROOT, *Dental Summary*.

Root-canal Filling: Root Amputation.—In cases where the apex cannot be reached file the canal as far as opened and amputate at the point of filling. Always continue the amputation until the filling material in the canal is reached so as to be sure that no unfilled portion remains. Amputate all and any part of roots that cannot be thoroughly opened, disinfected and filled.—E. LENOX CURTIS, *Items of Interest*.

Chloro-percha.—In making the solution, after you have applied the chloroform, stir it up and add eucalyptol until you have it in a creamy state. Then leave the cork out of the bottle to allow the chloroform to evaporate. You then have a solution which if forced through the apical foramen will cause less irritation than would the chloroform.—G. S. CÆSAR, *Dental Review*.

Silver-foil as Root-canal Filling.—Delightful results following the use of silver-foil in pulp-canals, in roots having large apical foramen, or a perforation. . . . A sufficient quantity is torn off and rolled into a small point, and only such portion used as the operator is able to place in proper position and condense.—L. S. CHILCOTT, *International Dental Journal*.

The Ideal Root-filling.—The ideal root-filling should be germicidal, penetrating, non-irritating, not contracting, impermeable to anything in the oral cavity. Gutta-percha combined with wood creosote and oil of cassia makes an antiseptic and ideal root-filling.—L. T. CANFIELD, *Dental Register*.

Asepsis in Root-canal Filling.—I always use a pair of sterile tweezers to handle my gutta-percha points, and in place of chloro-powder I use B-naphthol, which dissolves in chloroform, and mix the same with my osteo covering. With these precautions I feel that I have given longer life to pulpless teeth.—W. J. LAW, *British Dental Journal*.

Root-canal Filling; Europhen.—In canals that are impossible to get through, after the sulphuric acid treatment desiccate thoroughly and pack full of powdered europhen, using fine broach. If secretions are present, the iodine liberated renders the development of bacteria impossible.—S. MARSHALL WEAVER, *Ohio Dental Journal*.

Root-canal Filling.—A piece of silver wire of proper length is pointed at one end and is bent to form a hook or loop at the end to occupy the pulp-chamber. Coat with gutta-percha and it is ready to complete the filling of a canal filled with chloro-percha. The hook facilitates removal.—THEO. VON BUEST, *Dental Register*.

Paste for Root-canal Filling.—

R. Zinci oxidi	gm. 30
Zinci sulphatis	gm. 10
Ol. menth. pip.	gtt. ii
Lysoform	q.s. ft. pasta

The oil of peppermint disguises the disagreeable odor of the lysoform.—DR. HENTZE, *Deutsche Zahn. Woch.*

Root-canal Filling.—Use iodoformagen cement with one part oil of cloves to two parts of the accompanying liquid. This addition partially overcomes the objectionable too-quick-setting quality of the cement.—F. W. BARBOUR, *Dominion Dental Journal*.

Copper Amalgam as a Root-canal Filling.—In filling the roots of very weak teeth which are to be crowned—as when the walls are very thin and require some firm support—line the roots with copper amalgam, giving it time to set, inserting cement at a future sitting.—C. V. KRATZER, *Dental Cosmos*.

Oxychlorid of Zinc in Root-canal Filling.—(1) It does not shrink. (2) It is antiseptic for several hours. (3) It cauterizes and renders inert any organic material which may remain. (4) It seals the openings of the dentinal tubules. (5) It is compatible with structure.—J. D. PATTERSON, *Western Dental Journal*.

Root-canal Fillings.—The only perfect root-canal filling is one that fills all of the canal to the apex with some material that is impervious to moisture, be it metal, gutta-percha, cement, or what not. Antiseptics cannot be relied on for any definite period.—GEO. BROOKS, *American Dental Journal*.

Root-canal Filling.—Wipe out the canal and dry with hot air, fill with a paste composed of oxid of zinc and equal parts of creosote and 40 per cent. formaldehyd, completing with a gutta-percha cone dipped in chloroform.—H. RODIER, *La Revue de Stomatologie*.

Eucalypto-percha in Root-canal Filling.—Chloro-percha occupies less space in a root-canal after evaporation of the chloroform. Gutta-percha dissolved in eucalyptus oil does not contract, while the eucalyptus oil even penetrates into the tubuli.—DR. LEROY, *International Dental Journal*.

Filling Root-canals for Crowning.—After getting the roots in healthy condition, fill them with paraffin and aristol. A root-canal dryer will cause this to flow readily as far as the canal has been opened. After thorough excavation, and before filling, treat with nitrate of silver if it is where it will not show.—DR. CHASE, *International Dental Journal*.

Wood Pulp-canal Points.—For convenience in use, cheapness, and as a time-saver, the wood pulp-canal points is superior to anything else. After the canal has been pumped full of chloro-percha, twist off the wood point in the canal.—W. H. BAILEY, *Dental Digest*.

Paraffin as Root-canal Filling.—A little iodoform or aristol is first put in the canal, and then the paraffin is carried in with a fine heated broach. This makes a very good filling and will fill the root very thoroughly if a little care be used.—FRED A. PEESO, *Dental Cosmos*.

Chloro-percha as a Root-canal Filling.—The shrinkage of chloro-percha can be almost, if not wholly, overcome by packing cotton fibre with the chloro-percha before it has hardened, giving an almost ideal root-canal filling.—J. W. HAGEY, *Dominion Dental Journal*.

Root-canal Filling.—My method is to fill with common lime mixed with water to a pasty condition, with enough carbolic acid and iodoform well mixed with it to give anti-septic and disinfecting qualities.—W. D. SNYDER, *Ohio Den. Jour.*

Root-canal Filling.—Powdered asbestos, oil of cassia, and cotton. Protect with cement and prepare cavity for final filling.—W. T. McLEAN, *Ohio Dental Journal*.

Sterilized Cotton Root-filling.—Dip a pellet of cotton in iodine and leave it to burn. It does not fall to pieces and can be introduced without difficulty.—DR. HOTZ, *Dental Cosmos*.

Root-canal Filling.—In filling root-canals with pellets perforate each pellet with a small needle, to allow of the escape of the otherwise confined air in the root-canal.—DR. CADMAN, *International Dental Journal*.

Chloro-Percha in Root Canals.—Absorbent paper canal points are more effective than broaches in pumping chloro-percha in large or medium-sized canals.—H. W. GILLET, *Dental Cosmos*.

TREATMENT OF PULP AND PULP CANAL— MISCELLANEOUS

Pulp Amputation.—When from inaccessible position or other reasons the devitalized pulp cannot readily be removed from the canals after removal of arsenical application, amputate the pulp, preventing hemorrhage by the application of sublimated spirits. Fill the pulp chamber with dust-fine pulverized linden-wood charcoal, to which has been added a small amount of thymol. Cover with gutta-percha and immediately insert permanent filling.—H. SIEGFRIED, *Den. Dig.*

Decomposed Pulp.—In case of an unexposed pulp in an advanced state of decomposition the application of a paste of paraform and tricresol, in the neighborhood of the pulp, without directly exposing it, results in a slow development of formaldehyd gas which will penetrate the septum of dentin and disinfect the canal and its contents with better results than if attempt is made to open the pulp canal.—E. C. KIRK, *Dental Cosmos*.

Root-canals.—In all root-canals the best after-results have been obtained in cases where the canals have been largely reamed to remove the ends of the fibrillæ, thus furnishing a clear, open root and lessening the amount of putrescent material. Use a five or three-sided reamer. Results justify continuing that treatment in probably sixty-five per cent. of exposures.—E. T. DARBY, *International Dental Journal*.

Prevention of Recurrent Sepsis in Root-canals.—Cotton is a perfect barrier to prevent the ingress and egress of microorganisms; iodine is a germicide, antiseptic, and antipyretic; tannic acid will render connective tissue inert. Hence, after sterilizing the canal, seal the apex with cotton dipped first in tincture of iodine and then in finely-powdered tannic acid. If discoloration ensues, it is always due to faulty manipulation.—D. SHEEHAN, *Dental Summary*.

Sponge Grafting in Case of Absorbed or Perforated Roots.—When an absorbed or perforated root is diagnosed, a small piece of the finest Turkey sponge, clean and sterilized, may, with a suitable probe, be pushed through into the space beyond, forming a perfect seal, and into which fibrous tissue will grow, arresting absorption and preventing irritation.—GEORGE BRUNTON, *Dental Cosmos*.

Putrescent Pulp Treatment.—Excellent results can be obtained by using formalin and creosote, equal parts, to which alcohol has been added. Formalin and creosote without the alcohol will not make a clear solution; use only enough alcohol to effect this object; ten minims of alcohol is sufficient for a drachm, approximately, of the formalin and creosote.—J. P. BUCKLEY, *Dental Digest*.

To Reduce Inflammation of Pulp Previous to Arsenical Application.—Apply peroxid of hydrogen to the pulp; then, on a wisp of cotton, take up as much as is convenient of bicarbonate of soda and place loosely in cavity, saturating with chloric ether. Protect the cotton as preferred. After this treatment the pulp is less liable to give pain from application of arsenic.—DR. WILLIAMS, *International Dental Journal*.

The Broach.—Never use any other than a soft broach. The most convenient and effective method of sterilization is to pass the broach through the flame of the alcohol lamp just before using it. It should be held a little above the flame to avoid burning it, and should not be withdrawn from the heat too quickly or the sudden cooling will harden it.—J. LEON WILLIAMS, *Dental Cosmos*.

Prognosis in Pulp Exposure with Toothache.—If the dentin is normally sensitive the vitality of the pulp may be preserved. If there is an area of non-sensitiveness in the cornu nearest the point of exposure; if sensitiveness returns after bleeding the pulp, you may still hope for favorable results.—J. Y. CRAWFORD.

After Removal of Arsenical Dressings.—When an arsenical dressing is removed the cavity should be flooded with dialyzed iron and the pulp chamber opened up. Then without any attempt to remove anything seal tannic acid in some form in the cavity for the purpose of constringing and toughening the tissue. When it is essential to avoid discoloration of the tooth the tannic acid should not be used and all traces of the iron should be removed with alcohol.—J. P. BUCKLEY, *Dental Review*.

Flexible Nerve-canal Drills.—Mandolin wire is cut in suitable lengths, drawn taut, and flattened to about one-half its original diameter. With one end held in a pin-vice, it is then twisted its entire length, a section $\frac{3}{4}$ or $\frac{7}{8}$ of an inch cut off and soldered into an engine-bit, having a socket drilled to receive it; it is then to be sharpened. They are exceedingly flexible, following an opening made with a Donaldson broach.—A. E. MATTISON, *Dental Review*.

Treatment of a Root Through a Jacket Crown.—The jacket crown being hollow, and having a metal back, provides a ready means of access to the pulp-canal; this is a point in its favor, particularly to those who claim that a crown capped will surely give trouble unless the pulp be devitalized. Using a crown of this description, therefore, will demonstrate pulp-vitality and, when treatment is necessary, lessen its difficulties.—W. A. CAPON, *Dental Brief*.

Putrescent Pulp-canals.—In the treatment of abscesses and root-canals generally the following mixture is most serviceable. Take oil of cloves and carbolic acid crystals equal parts, melting the carbolic acid crystals and adding the oil of cloves. This mixture is easily prepared and possesses in a marked degree the desirable qualities of the essential oil-carbolic acid mixture. If used with reasonable care it will not discolor the teeth.—F. W. STEPHEN in *Dental Brief*.

Putrescent Root-canals.—As a disinfectant of putrescent root-canals bromo-chloron is far superior to anything now in use. It leaves not a trace of odor. Invariably the canal is so clean and sweet that it may be filled at the second sitting.—D. W. BARKER, *Items of Interest*.

Compressed Air in Root Preparation.—When using the reamer or facer in preparing roots for crowns a jet of compressed air not only keeps the heat down but blows away mucus or blood, the root remaining clear and distinct while being prepared; also doing away with pain, a thing greatly to be desired.—W. H. HECKARD, *Indiana Dental Journal*.

Putrescent Root-canals.—The dentinal tubules of an infected tooth are saturated with putrescent protoplasm, which no instrumentation can reach; the only way of thoroughly sterilizing the tubules and rendering the root absolutely safe to fill is to so act on the contents that nothing is left. The agent used is sodium dioxid; it not merely destroys the life of bacteria and renders pus and debris more or less aseptic, but it simply removes everything in the canal, whether proteid or fatty.—BERNARD BENNETTE, *Dental Record*.

The Essentials to Success in Root Treatment.—1. The rubber-dam. 2. Free, direct access. 3. Thorough cleansing, mechanically and antiseptically. 4. Getting the antiseptic through the root. 5. Perfectly filling the root, immediately upon getting an aseptic condition, with an antiseptic root filling. 6. Sufficient confidence in the method used to insure thorough work and the minutest attention to details.—F. MILTON SMITH, *International Dental Journal*.

Pulp Mummification.—Never mummify a pulp in other condition than freshly exposed. Some try to mummify pulps that are diseased, pulps with pulp stones, teeth that are loose in the socket; that is where the failures come in. The pulp must be in comparatively a healthy condition.—A. M. WAAS, *Items of Interest*.

Death of the Pulp.—That the drilling of retaining pits into the body of the dentin and the presence of a filling that possesses, to a greater or less degree, the property of thermal conductivity can be responsible for irritation sufficient to destroy the vitality of the pulp, proves conclusively the intimate connection between that tissue and the pulp organ. It is in view of this fact that in treating caries, however superficial the decay may be, methods should be adopted that will reduce to a minimum the chances of subsequent trouble.—J. C. SALVAS, *Dental Brief*.

Sterilizing Root-canals.—In from ten to fifteen minutes the electrolytic action of a constant galvanic current of from one to two milliampères suffices for sterilizing completely root-canals inaccessible to instrumentation. Injecting a seventy-five per cent. aqueous solution of salt, thoroughly saturating the canal contents, gives a good conductor. If the anode, or positive pole, is made of platinum it will deposit chlorin, oxygen, and hydrochloric acid, these ions promising a decided antibacterial effect.—KURT HOFFENDAHL, *Dental Cosmos*.

Pulp Digestion, for Teeth Having Small and Tortuous Roots.—One-half to one grain of papain is made into a paste with glycerol, and one drop of 1 to 300 hydrochloric acid added. After removal of bulbous portion of pulp put paste into pulp-chamber and seal in with oxysulphate or oxyphosphate of zinc, or gutta-percha, for one week or two if necessary. With rubber-dam in place, open the cavity, and the pulp will be found liquefied or digested into something like thin glue, easily removed. Fill at once.—A. W. HARLAN, *Dental Review*.

Mummifying Paste.—Most satisfactory results can be had from the following: Calomel and zinc oxid equal parts and sufficient formaldehyd to make a paste. The formaldehyd readily evaporates, so that it will be necessary to occasionally add more of it to the mixture.—*Dental World*.

Pulp Protection.—Dip a sheet of asbestos foil into sandarac or balsam varnish; when dry, dip again, repeating until well glazed. From this punch small disks of different sizes. When about to use, dip again in varnish, and place in position over exposed pulp, covering with cement (first drying pulp and applying carbolic acid).—I. D. WHITMAN, *Ohio Dental Journal*.

Chromic Acid in Pulp Mummification: Caution.—The use of chromic acid in conjunction with sulphuric acid has been recommended for pulp mummification. It should be remembered that chromic acid is an explosive agent; when brought in contact with alcohol, ether, glycerin, etc., decomposition takes place, sometimes with dangerous violence.—H. PRINTZ, *Dental Digest*.

A Mummifying Paste.—

R. Dried alum,
Thymol,
Glycerolāā 3j
Zinc oxid, q. s. to make a stiff paste.
Misce.

Sig.—Apply to pulp-chamber and cover with gutta-percha.

—H. R. SOULEN, *Dental Brief*.

Pulp Digestion.—If a few drops of caroid solvent are introduced into the pulp-chamber and sealed in for two or three days with temporary stopping, a pulp otherwise difficult of access can be removed by irrigation with an alkaline solution.—L. GREENBAUM, *Dental Cosmos*.

Pulp Capping.—In order to encourage the throwing out of secondary dentin as a protective to the pulp, the greatest care must be used to preserve the superficial layer covering the pulp, from which the secondary dentin is formed, much in the same way as a surgeon, when requiring new bone to be formed, preserves the periosteum intact.—F. COLEMAN, *The Dental Record*.

Pulp-capping.—Iodoform powder, made in a paste with creosote, and flowed gently over the exposure, and protected by cement applied over it, comes as near perfection as a pulp-capping as anything in my experience or observation.—D. D. ATKINSON, *Am. Weekly Dentist*.

Mummifying Paste.—This is not intended for use in putrid conditions in dead teeth. It only takes care of the ends of pulps that we cannot get at otherwise. It takes care of healthy pulp tissue that you cannot extract, and you afterwards fill the canals. The pulp chamber must be clean and dry. Use as much care there as though you were trying to fill the canals with gold.—DR. RIPPIER, *Items of Interest*.

Papain for Pulp Digestion or Liquefaction.—The use of a paste composed of papain and glycerol, with one drop of hydrochloric acid, does away with the uncertainty of pulp mummification. Papain is not poisonous, and putrefaction will not take place in the presence of this paste. It will act even if creosote or carbolic acid, arsenic or zinc chlorid has been in contact with the pulp.—A. W. HARLAN, *Dental Review*.

Pulp-capping.—In all cavities deep enough to require protection mix oxid of zinc to a creamy paste with carbolyzed resin; apply over the exposure, if there be one, or the vital spot. Add a thin covering of soft cement over the capping and apply the necessary filling.—W. R. HUGHES, *Pacific Dental Gazette*.

Pulp Protection.—Coat the cavity walls with thin varnish and partially fill with cement, completing with porcelain, gold or amalgam, sufficiently to protect the underlying cement. The varnish protects the dentinal fibrillæ from the irritating effects of the cement, the cement protects the pulp from thermal shock, the gold or amalgam protects the cement from disintegration.—F. G. WORTHLY, *Western Dental Journal*.

Pulp Protection.—With a ball burnisher make a concavity in the under surface of a wafer of gutta-percha; coat it on the under surface with a good cavity varnish. For use in case of vital pulp needing more protection than cement alone would afford.—IRA J. COE, *Dental Cosmos*.

Pulp Mummification.—Pulps being in warm moist mouths, there is no remedy known to chemistry that will, under such circumstances, make a mummy that will remain a mummy. Put a mummy under the Pyramids of Egypt, and in that dry atmosphere it will remain a mummy, but the pulp of a tooth in the mouth does not act that way.—DR. BOGUE, *Items of Interest*.

Formalin in Pulp Conservation.—Dr. Kirchoff employs formalin when amputating pulps in bicusps and molars. When the coronal end of the pulp is exposed, he applies to it a mixture of formalin and zinc oxid; then covers this with cement and builds over all the permanent filling.—B. J. CIGRAND, in *Dental Digest*.

Paste for Pulp Mummification.—

R. Paraformaldehyd
 Thymol 3i
 Zinc oxid 3ii
 Glycerin to make stiff paste.

—H. PRINTZ, *Dental Digest*.

Capping Pulps: Scheuer's Paste.—Never destroy the pulp if it can be avoided, but usually remove all the leathery substance. Scheuer's paste is good. It is very sticky and hard to manipulate. Place a bit of varnish in the cavity near the pulp, then moisten a fine instrument with glycerin, pass a small quantity of the paste up against the varnish, and drag the paste over the pulp carefully. When a good coating is secured cement can be put on at once.—F. MESSERSCHMIDT, *Dental Digest*.

Pulp Capping.—When a pulp of a young tooth has been accidentally exposed, being normal and healthy, chances are usually good for the completion of the apical portion of the root. Cap with oxyphosphate of zinc, diluting the fluid with oil of cloves or any mild antiseptic fluid to reduce the irritating effect of the phosphoric acid solution. Mix to creamy consistency and apply in such manner as to cause no pressure.—A. T. STARR, *Dental Cosmos*.

Formagen Cement.—To avoid pulp devitalization in cases where caries encroaches very near the pulp, or in case of accidental pulp exposure, insert a small amount of formagen cement, then a sufficient quantity of "osteo" to allow of cutting retention grooves or undercuts, and finish with amalgam, gold, or porcelain. While a few pulps are prone to necrosis, the majority will survive under this treatment.—ARTHUR L. BOSTICK, *Dental Record*.

Pulp Capping.—It should adapt itself perfectly to the pulp and other dental tissues without compressing the pulp. Incidentally, the property of adhering firmly to dental structure is a desirable one. It should be a non-conductor of heat and should be non-irritating. It should have anæsthetic and germicidal properties. It should in itself be a bridging material. A thin layer of the material should be rigid. The capping should economize space. It should set quickly. Its method of application should fit it for use in any portion of the mouth.—A. L. BOWER, *Dental Brief*.

Pulp Capping.—Boracic acid, one part, and zinc oxid, two parts; mix with creosote. This makes a soft, velvety paste, which should be spread over the exposure very delicately, avoiding the slightest pressure. The boracic acid is a refrigerant, permanent antiseptic, reducing inflammation; the creosote is a diffusible antiseptic and destroyer of germs; the zinc oxid is bland and non-conductive of thermal stimuli.—C. STANLEY SMITH, *Dental Summary*.

Pulp Mummification.—If asked to name the best drugs for mummifying pulp tissue, whether fresh and vital or necrotic and septic, mention silver nitrate first of all, placing some cotton well charged with powdered silver nitrate in the canals, covering it over with cement of gutta-percha until it should dissolve and permeate the entire substance of the tooth.—L. G. NOEL, *Dental Headlight*.

Conservative Pulp Treatment.—Iodoformagen cement of a rather thin creamy consistency, carried to place in a depressed cavity-cap disk, covering the exposed pulp snugly but without pressure, will give astonishing results. Mix on a heavy glass plate raised to the temperature of the blood, and warm the spatula. This in order to overcome the quick-setting tendency of the cement.—OTTO BECHEL, *Items of Interest*.

Pulp Digestion.—

R. Papaingr. i
Glycerin
Hydrochloric acid, 1-300 solutionãã gtt. i

Make a paste, apply to *dead* pulp, and seal into the cavity for two weeks, at the end of which time the pulp will be digested. First destroy the pulp with arsenic left in the tooth for two or three days. Remove the arsenic, cut away the bulbous portion of the pulp, and introduce the paste as above. The pulp is reduced to a jelly-like mass resembling glue, and is easily removed.—A. W. HARLAN, *Dental Review*.

Pulp Capping.—Carbonized cotton, like all carbon, is a poor conductor of heat and electricity, a thing to be considered in pulp capping. It can be thoroughly sterilized and used in all cavities where the walls are not so thin as to allow the color to appear through. Dip into the medicament, place carefully over the pulp and seal with temporary stopping—preferably formalin cement, which hardens rapidly, is a powerful antiseptic, and can be removed if necessary.—A. JESSEL, *Dental Review*.

Stanno-Percha.—Scheuer's stanno-percha is a labor and time-saving material of great value. As a pulp-capping material it is without difficulty placed in correct position. Amalgam readily unites with the tin present, and either sponge gold or gold foil may be readily worked into the slightly softened layer. As a temporary filling, or for retaining arsenical dressings it is of great value and to be preferred over all other materials.—*Dental Messenger* (St. Petersburg).

For Relief of Reflex Pains from Diseased Pulp.—

R. Acetanelid grs. viii.
 Phenacetin grs. xv.
 Caffein citrate grs. xv.
 Misce et ft. pulv. No. viii.

Sig.—One to be taken every two hours.

—LEO GREENBAUM, *International Dental Journal*.

Removal of Barbed Broach from Canal.—In a difficult case saturate a pledget of cotton with twenty-five per cent. pyrozone and seal in the cavity with gutta-percha or sandarac for three or four days, when the pyrozone will have so completely rusted it that its removal will be easy.—*Journal of the British Dental Association*.

Putrescent Pulp.—For putrescent pulps which are still quite sensitive upon touch of broach, a mixture of tannic acid with glycerin will in a few days so toughen and tan the pulp that it may be removed entirely, and with little or no pain.—A. F. STRANGE, *American Dental Journal*.

Root-canal Sterilization.—Oxidize contents of canal by inserting a small crystal of permanganate of potash; cleanse thoroughly, following with aristol and oleum gaultheria. If pus is present, precede the aristol with zinc chlorid, 5 to 10 grains in 1 dram water, or formalin, 5 per cent. solution.—LOUIS JACK, *Ohio Dental Journal*.

The Tests of Success in Root-treatment.—1. The Physical test: the absence of pain under temporary stopping. 2. The Scientific test: a culture made from the cotton dressing; also from a fresh specimen taken after thorough disinfection when we *think* the root is ready to fill.—T. W. ONDERDONK, *International Dental Journal*.

Hemorrhage after Pulp Extirpation.—Wrap a few fibres of cotton on a broach, dip in trichloracetic acid and insert to bottom of canal. Hold it there a few seconds and the hemorrhage will cease. This will also cauterize the ends of the severed nerve fibres.—A. ENBANK, *Dental Headlight*.

Hemorrhage After Pulp Removal.—Pump ten or fifteen per cent. trichloracetic acid towards the apex of the canal with cotton on a broach. If this fails, have the cotton saturated with the acid in the canal, and exert pressure with unvulcanized rubber and a large-ended instrument. This will rarely fail.—HAROLD CLARK, *Dominion Dental Journal*.

Sensitiveness at the End of Root-canals.—Pump the canal full of eucalyptol and proceed cautiously to the end. This is effective in cases of sensitiveness following extirpation under pressure anæsthesia, but it is more effective in cleansing roots after arsenical applications.—R. E. SPARKS, *Dental Cosmos*.

Putrescent Pulp.—On opening up a pulp-chamber in which there is a putrescent pulp giving out a most offensive odor, dip your broach in oil of turpentine and insert in canal; the odor will change almost instantly, most agreeably to both yourself and patient.—J. E. McDONALD, *Dominion Dental Journal*.

To Control Hemorrhage at Apex of Root after Removal of Pulp.—Wet a needle of bibulous paper in bichlorid of mercury and insert in canal. Will control hemorrhage every time.—J. Y. CRAWFORD.

Introducing Cement Into a Pulp-canal.—To prevent the cement from drawing away with the instrument moisten a small square of blotting paper with aromatic sulphuric acid and pass the face of the instrument over that, slightly moistening it. The cement may be forced up with the instrument and will not be drawn away.—J. W. BEACH, *Dental Cosmos*.

Pulp Devitalization in Posterior Teeth.—To minute particle of arsenic crystals add about double the quantity of alum and a drop of campho-phenique. Take up the mass on a small pledget of devitalizing fiber, which, as it contains morphin, will assist in keeping the tooth quiet. Iodoform will prevent subsequent soreness.—F. C. PAYNE, *Pa. Med. Den. Gazette*.

Pulpless Teeth.—By the use of peroxid of sodium (instead of the bicarbonate) after treating root-canals with sulphuric acid, mephitic gases are broken up, microörganisms discharged, organic acid coloring matter destroyed, and the tooth bleached and left in as perfect a condition as it is possible to place it.—S. S. MCFARLAN, *Dental Review*.

Soreness After Removal of Pulp.—To prevent soreness after removal of pulp under pressure anæsthesia, wait for hemorrhage to subside and place in the canal a dressing of cotton saturated with extract of witch-hazel, full strength, letting it remain until the next sitting, when the root canal can be filled.—G. W. PRINGLE, *Dental Cosmos*.

To Remove Gutta-percha Points from Root-canals.—Roughen the point of an Evans root-canal dryer, heat the bulb, and press the point slowly into the canal. Cool the bulb with a wet sponge, and on removing the point the gutta-percha will come with it.—*Indiana Dental Journal*.

To Expedite the Treatment of Putrescent Root-canals.—As a source of gratifying results, use a dressing composed of equal parts of alcohol, formalin and beechwood creosote.—CHARLES E. SLAGLE, *Brief*.

Hemorrhage After Removal of Live Pulp.—Hemorrhage is sometimes copious, but I have found that witch-hazel, freely used, would check the flow in a very short time.—A. H. PECK, *Dental Digest*.

Hemorrhage After Pulp Extirpation.—Wind cotton on a broach, dip in 25 per cent. pyrozone and put up the canal, and the bleeding will stop instantly. The canal can be dried and filled at once.—L. WEST, *Items of Interest*.

Soreness at Apex of Root.—A solution of menthol in chloroform, applied in root canal, will remedy the soreness at apex after pulp has been devitalized by arsenic and removed.—W. C. SMITH, *Pacific Dental Gazette*.

A Pus Destroyer.—As a pus destroyer no drug will take the place of ichthyol.—*Lancet Critic*.

ROOT CANAL TREATMENT IN DECIDUOUS TEETH

Taper a suitable sized gold wire or broach and sharpen the point. Force cautiously through the end of the canal, just enough to prick a little, of which the patient will give warning. Mark the exact length of the canal and withdraw. File off the tiny sharpened point; insert again and force to the end of the root, making sure there is no pain. Remove again and file almost through the wire, one-sixteenth of an inch from the end. Force home in the canal again and twist off the wire, leaving in position the filed-off end, thus securely sealing the apex with a royal metal. Fill the remainder of the canal as preferred.—J. H. DALY, *International Dental Journal*.

In molar roots use copper wire with chloro-percha. The therapeutic action of the sulphate of copper, the hermetic sealing of the gutta-percha, combined with the preserving qualities of chloroform, make this a very desirable nerve canal filling.—W. J. MORRISON, *Dental Headlight*.

Cut soft gold foil in very thin strips, fold it once and cut into very small pieces not larger than half a pin's head. For a root-canal plugger take a Donaldson nerve extractor, snip off the hook and flatten the end. Measure the depth of the canal and mark it on the instrument with a bit of rubber-dam slipped on it. With this instrument pick up one of the very small pieces of gold and carry it steadily to the apex and pack with the plugger described. The rubber-dam index will tell you when you have got to the apex. When you know the apex is well filled any other material will answer for the rest of the canal.—N. T. SHIELDS, *Dental Cosmos*.

Form a cone-shaped piece of lead or fine-grained wood and saturate in some antiseptic fluid. Coat the surface with oxyphosphate and press firmly home. By this method the space is completely obliterated and the ends of the tubuli closed.—J. TAFT, *International Dental Journal*.

Powdered resin, dissolved in alcohol, makes an antiseptic, insoluble root-canal filling.—D. V. BEACOCK, in *Ohio Dental Journal*.

Treatment of Abscessed Deciduous Teeth.—Cleanse canals as thoroughly as possible. Fill pulp-chambers with cotton saturated with oil of cloves and by means of unvulcanized rubber exert pressure on cotton until oil of cloves is forced through sinus. Then flood cavity with solution gutta-percha in eucalyptus and force temporary stopping into each canal until the eucalyptus appears at fistulous opening.—C. N. JOHNSON.

Removal of Living Sensitive Pulp in the Teeth of Children.—Wash the cavity thoroughly with warm water, remove food débris and as much decay as may be removed painlessly. Place two or three drops of adrenalin on the mixing-slab and macerate in it fresh crystals of cocain; saturate a small pellet of cotton and place in cavity; cover with unvulcanized rubber and produce pressure with tip of finger, using napkin to avoid escape of cocain into the mouth. Exert pressure for exactly three minutes. The gum septum will then be insensitive and all carious matter can be removed and the pulp fully uncovered.—*Items of Interest.*

Root-canal Filling.—Let stand two or three days before using. Pump into root-canal and then force in gutta-percha points.—M. D. GOBLE, *International Dental Journal.*

B. Chloroform	3ss
Gutta-percha,	
Resin	āā 3j

Exposed Pulp in Deciduous Teeth.—The pain incident to exposure of the pulp can usually be controlled by syringing the cavity with tepid water; follow by the application of oil of cloves slightly warm on a pledget of cotton. To protect the pulp from further irritation, cap the pulp with a paste made of oxid of zinc and oil of cloves and fill the cavity with cement. The pulp will usually die, but in the meantime it will have been kept comfortable, and often until the tooth is shed.—HENRY L. BANZHAF, *Dental Review.*

Filling Root-canals of Deciduous Teeth.—When the root canals of deciduous teeth have been filled absorption ceases. The teeth should therefore be kept non-occluded by the use of the carborundum wheel from time to time, as suggested by Dr. J. Y. Crawford. They will then be gradually extruded from the socket; otherwise abnormal eruption, or impaction, of the permanent teeth may result.—W. J. MORRISON, *Dental Headlight.*

Root-canal Filling: Deciduous Teeth.—A material that is easily inserted and easily removed is found in a mixture of salol and paraffin. If kept in a test-tube it becomes liquid on being dipped in hot water, and solidifies at once when transferred to the canal on a hot spatula, working it down with a smooth broach; or strands of cotton or floss silk may be introduced into the liquid and transferred to the canal, packed down with a warm instrument.—G. S. MARTEN, *Dominion Dental Journal*.

The foramen, in tortuous root-canals, is more readily reached with gutta-percha reduced to a cream with eucalyptus oil than with chloro-percha. In case of large foramen, the eucalyptus is soothing to the tissues beyond the foramen, rather than irritating, as is the case with chloroform.—H. C. WEST, *Dental Review*.

Gutta-percha will cling more closely if the canal is washed with ammonia water one-half per cent. dilution.—A. W. HARLAN, *Dental Review*.

After the cavities are prepared, I use chloroform, then liquid gutta-percha, then gutta-percha points, then hot air and pack solidly.—R. R. ANDREWS, *Ohio Dental Journal*.

Roll red gutta-percha into a long, tapering point. Working some chloroform into the canal, take the cone in a pair of delicate forceps, hold it a moment or so in chloroform so that the outside is softened or partially dissolved, then press the cone cold into the canal. The cone, while soft and sticky on the outside, is, as a whole, stiff, elastic and yielding, and quite obliterates the space.—L. D. SHEPARD, *International Dental Journal*.

With a syringe inject a drop or two of a saturated solution of hydro-naphthol in chloroform. Follow with gutta-percha cones till the canal is filled. Simple, clean, antiseptic, effective.—S. FREEMAN, *International Dental Journal*.

In case of perforation, if the canal is accessible, whittle a piece of wood to the length and size of canal—trying it in to ascertain that it does fit; then make the point a little smaller and wrap around it a piece of very thin, well annealed platinum foil. Dry the canal and coat the platinum with thin varnish. Then push the platinized wood point to the end of the canal and gently remove the wooden point, leaving the platinum lining in the canal. Blow in hot air to hasten the hardening of the varnish, and proceed to fill.—*Editor American Dental Weekly.*

With Donaldson nerve broach work in up to apex as much creamy oxyphosphate as possible. Then drive in a splinter of orange or cedar wood trimmed smaller than the canal, and leave it there.—*DR. ALLEN, International Dental Journal.*

Cedar wood is peculiarly well adapted for filling root-canals, as it is very soft laterally and adapts itself readily to any irregularity in the canal, while it is very hard when dried.—*DR. SEABURY, International Dental Journal.*

Trim a Japanese wooden toothpick, dip with chloro-percha and use as a piston to force the chloro-percha into the root-canal, leaving the stick in the canal, filling it positively and most perfectly. In case of subsequent trouble it is readily removed with pliers.—*GEO. A. McMULLEN, Dental Review.*

With hypodermic syringe fill root-canal with chloroform and immediately insert gutta-percha points.—*R. T. OLIVER, Ohio Dental Journal.*

If the canals and the opening at the apex are very large, wrap barbed gold wire with red gutta-percha, putting it in and out several times, getting an impression of the canal by which to gauge the proper quantity of gutta-percha required to fill it completely.—*S. G. PERRY, International Dental Journal.*

Trim a small, fine needle of orange or some other wood, made sterile by proper treatment. Roll a small quantity of Abbey's soft gold foil around the tiny end and then tap it into the apical third of the canal, after which the remaining portion can be filled with any of the reputable root fillings desired except tea, lead or amalgam. The latter are factors in the discoloration of pulpless teeth, when placed in the roots.—J. Y. CRAWFORD, *International Dental Journal*.

Chloro-percha and asbestos form an indestructible root-canal filling which can be packed firmly, and which can be introduced into canals too fine to admit a gutta-percha cone.—CARL E. KLOTZ, *Ohio Dental Journal*.

Cleanse the canals thoroughly, both mechanically and chemically, with an antiseptic oil, absorbing surplus with antiseptic cotton; follow with alcohol, hot air, and finally a hot root-canal drier. Select a gutta-percha cone, roll to fit the canal; lubricate canal walls with hot eucalyptus, pump in chloro-percha, and introduce the cone, using care to exclude the air.—ELGIN MAWHINNEY, *Dental Review*.

Fill the canals with powdered iodoform mixed with campho-phenique.—W. E. GRANT, *Dental Digest*.

Render aseptic with peroxid, and oil of cloves and carbolic acid, half and half. Fill canals with shreds of cotton impregnated with aristol dissolved in chloroform.—B. J. DE VRIES, *Dental Register*.

Use a paste made of oxid of zinc and aristol equal parts, with enough oil of cassia and vaseline to make a soft putty-like paste. Work into canals with a hot instrument wrapped with a wisp of cotton.—CHAS. KEYES, *International Dental Journal*.

Wind gold foil on a fine broach; then pull the foil one-quarter inch beyond end of broach, and roll in fingers to a fine point with which canal can be filled.—DR. HILL, *International Dental Journal*.

I obtain very satisfactory results by packing the canal as tightly as possible with cotton and iodoform paste.—S. H. GUILFORD, *International Dental Journal*.

When the canals are of good size, and can be made easily accessible, I have found no substance so good for filling the apical portion as small cones of gold foil malleted into place, the remainder being filed with gutta-percha or oxychlorid of zinc.—LOUIS JACK, *International Dental Journal*.

Shape rods of lead, zinc or tin to fit, and imbed in canal in a paste of tincture of benzoin and oxid of zinc.—J. L. WILLIAMS, *Dental Cosmos*.

A quick and effective root filling is made with an aluminum point which can also be used to cleanse the root-canal. The aluminum being soft can easily be bent and nicked at the right point where it is to break off.—DR. DUNN, SR., *Dental Weekly*.

With a smooth broach pass into the canal some oxyphosphate or oxychlorid of zinc, lining it to the apex. Have ready a tapered piece of lead wire, which pass into the canal, forcing it home with a plugger. The lead can be compressed and will force the plastic into the remotest parts of the canal. The lead salts are antiseptic, and, if the canal has been properly prepared and sterilized, pericementitis is not likely to ensue.—F. D. PRICE, *Dominion Dental Journal*.

In very small canals I have been using Gramm's fine copper points. First pump in chloro-percha, made from chloroform, to which has been added twenty-six per cent. formalin.—ELGIN MAWHINNEY, *Dental Review*.

Root-canal Filling for Deciduous Teeth.—The material selected should be such that if absorption occurs the filling will not interfere. In preference to all others melted paraffin and balsam-of-the-desert, iodoform and glycerin, or iodoform and oil of cloves.—D. H. ZIEGLER, *Ohio Dental Journal*.

Pulp Mummification in Deciduous Molars.—When a child presents itself with an aching deciduous molar with exposed pulp, destroy and remove pulp from chamber only, and fill the chamber with Soderberg's paste, filling cavity with oxyphosphate.—O. E. HOUGHTON, *Items of Interest*.

Treatment of Pulpless Deciduous Teeth.—When root filling is impracticable, remove contents, sterilize with 3 per cent. aqueous solution hydrogen peroxid and close open ends of tubuli with cavatine or similar preparation. Fill with gutta-percha or other soft filling. Absorption of the roots is not interfered with, and the tooth will seldom give trouble if carefully treated in this manner.—GEO. S. ALLEN, *International Den. Jour.*

Pulp Devitalization in Deciduous Teeth.—Under normal physiological conditions the pulps of the deciduous teeth seem to remain active until the entire tooth, with the exception of the enamel cap, is absorbed and the latter ready to tumble out. If the deciduous pulp is destroyed, this physiological process of absorption ceases, and to a certain extent the root becomes a foreign body.—H. C. REGISTER, *Dental Cosmos*.

Pulp Devitalization in Deciduous Teeth.—I have used with much success a paste of powdered cantharides and carbolic acid—say about one-twentieth grain of the powder with enough carbolic acid or creosote to make a paste.—E. T. DARBY, *International Dental Journal*.

Root-canal Filling of Deciduous Teeth.—If the teeth are not to be retained very long a creamy paste of iodoform and oil of cloves, or paraffin wax, will very well serve the purpose of root-canal filling.—A. H. PECK, *Dental Review*.

Root-canal Filling for Deciduous Teeth.—Make a paste of iodoform in glycerol, of such consistency as can be readily applied on a probe. Fill pulp chamber with temporary stopping, and cavity according to conditions.—GEO. N. WASSER, *Ohio Den. Jour.*

CHAPTER IX

PYORRHŒA ALVEOLARIS AND ASSOCIATED CONDITIONS

An Appliance for Retaining Loose Teeth.—The appliance consists of what may be styled two yokes held together by means of bolts or screws. These yokes fit accurately the cervical border of the labial and lingual surfaces of the loose teeth and those intended as supports at either end, and are held in place by the bolts which pass through the interproximal spaces. An accurate impression is obtained of the labial and lingual surfaces of the teeth involved, from which a metal die is made. On this die is swaged or burnished a narrow strip of pure gold, thirty gauge. This strip is then cut to shape and tried in the mouth and burnished so as to fit the cervical border of the teeth accurately. The yokes should now be strengthened with 22-karat solder. Drill holes the exact gauge of the bolts through the labial yoke at the approximal spaces. Place the yokes in position and with a sharp instrument mark on the lingual yoke where the corresponding holes are to be drilled. The bolts are made of platinum and iridium wire, with cone-shaped head and nuts, which are to be countersunk in the yokes. Where it is necessary to hold an elongating tooth or to prevent the yokes slipping on the roots, a half cap may be swaged to fit the lingual surface of the tooth and soldered to the lingual yoke. This cap is cemented to the tooth, the yokes bolted firmly in place, and the heads and nuts ground and polished smooth.

—E. DARWIN REED, *Dental Brief*.

Ulceration of Tooth Sockets.—If serumal calculus deposits, first remove all deposits and, secondly, operate upon the soft tissues, but not until the socket is completely disinfected and cleansed. If the soft tissues be gouged and scraped and cut sufficiently to rid them of adherent dead and dying portions, causing a flow of blood to relieve turgidity and carry away the effete white corpuscles, we have a condition which will promise a cure. The weeping serum is not to be disturbed or burned or cauterized; let it alone.—A. W. HARLAN, *Dental Cosmos*.

Pyorrhœa Alveolaris.—When the disease is well established and the sockets deep, inject cocain and remove the tooth; pack the alveolus with cotton saturated with a formalin solution (one in five parts of water) dipped in cocain crystals. Remove the pulp from the extracted tooth, swab out the canals with formalin, fill the roots with gutta-percha, scrape off all remaining pericemental membrane, calculus and other adhesions from the roots. Disinfect thoroughly, replant the tooth, and ligate to the adjoining teeth with fine flexible wire, treat antiseptically until all inflammation subsides.—DR. B. DOLAN, *The Stomatologist*.

Iodo-glycerol in Pyorrhœa Alveolaris.—If the disease be due to local causes, the removal of the cause and local treatment will generally be all that is necessary. The removal of deposits and the application of iodo-glycerol every other day with vigorous gum-massage will soon reduce and restore the gum and alveolar process to a healthy condition.

The formula for iodo-glycerol is:

Zinc iodid	15 gm.
Water	10 "
Iodin	25 "
Glycerin	50 "

Loose teeth should be fastened to solid teeth to preserve them as long as possible and to prevent movement from extending the inflammatory process to adjoining teeth.—E. S. TALBOT, *Dental Cosmos*.

Pyorrhœa Alveolaris.—After thorough removal of all deposits and curettement of the pocket, removing all necrotic bone and granulation tissue, syringe repeatedly with hot water and apply lactic acid in a thorough manner. This has a pronounced effect in promoting a healing of the affected parts. The lactic acid not only induces healthy granulation tissue to spring up, but insures a union between the tissues and the root; that is, by partly decalcifying the outer layers of the root it opens up the mouths of the canaliculi and stimulates the adjacent tissue to healthy action. Prescribe an antiseptic mouth wash, to be held in the mouth not less than three or four minutes, and frequently repeated.—O. N. HEISE, *Dental Register*.

Pyorrhœa and Gingivitis.—In case of pyorrhœa alveolaris and gingivitis douch the mouth by means of a rubber hose attached to the faucet of a bath. By pressure of the hose between thumb and finger the force can be regulated so as to expel from the interstitial spaces all deposits that are not attached to the teeth, and all the surfaces of the teeth can be subjected to the action of the stream; the gums, buccal surfaces, under the tongue, the teeth, and to those not easily gagged the fauces.—S. BLAIR LUCKIE, *International Dental Journal*.

Sealing Pyorrhœa Pockets.—

B. Purified gun lac	135
Purified benzoin	5
Carbol. acid crystals	50
Oil cinnamon	3
Saccharin	3
Alcohol q. s. to make $\frac{1}{2}$ liter.	

After the removal of all deposits and the application of a stimulating escharotic, covering with the above soothing application will keep the pockets sealed for many hours, and will be found beneficial from its therapeutic properties.—M. L. RHEIN, *Dental Review*.

Trichloroacetic Acid in the Treatment of Pyorrhœa Alveolaris.—Trichloroacetic acid not only acts as a solvent, but its judicious use causes a slight sloughing, which seems to be particularly stimulating and healthy granulations soon spring from the gum tissue. Carry to base of pocket, and repeat as may be necessary. Take one tooth at a time and clean it well. Syringe the pocket with any soothing antiseptic, dry the pocket as far as possible, and fill with a paste of powdered pepsin and boracic acid in vaselin. Prescribe a proper mouth wash or spray, and do not touch that tooth again.—HENRY H. TOMKINS, *Items of Interest*.

Cleansing Pyorrhœa Pockets.—Wash out loosened particles of calculus with luke-warm water, to which an antiseptic has been added, and follow by pyrozone, which should have been brought to the temperature of the body in an open vessel, and a small tablet of soda-mint added just before using. The increased temperature lessens pain and the soda-mint neutralizes the acid and liberates oxygen, causing greater effervescence with better cleansing of the pocket. It acts as a pus destroyer also.—A. H. MABEE, *Dominion Dental Journal*.

Pyorrhœa Alveolaris a Catarrh of the Gums.—In the case of a patient whose gums showed every evidence of Riggs' disease, the effects in the mouth of the use of Seiler's antiseptic tablets for the nose and throat were most remarkable. Instead of loose teeth and spongy gums the teeth became firm and the gums perfectly healthy in a short time.—DR. FISHER, *Items of Interest*.

Splinting Loosened Teeth in Pyorrhœa Alveolaris.—Ligatures of pure silver wire, of about 30 gauge, can be used to great advantage if covered with celluloid cement. When the ligature tends to move upward towards the gum, small buttons of oxyphosphate cement can be placed upon the necks of the teeth above the point of placement of the ligature.—M. L. RHEIN, *Dental Cosmos*.

Chronic Pyorrhœa—Treatment of an Advanced Case.—

An upper left first bicuspid, no connection between the roots of the teeth and the maxilla; pus constantly flowing and the patient's breath impaired. The tooth was extracted, the pulp removed, tooth sterilized, apex of root amputated, socket deepened and tooth replanted. Result—Tooth firm and in a healthy condition. Silk ligatures were used instead of mechanical splint. Check hemorrhage, if any, with sulpho-naphthol and hot water.—R. H. COOL, *Pacific Stom. Gazette*.

Pulp Removal in the Treatment of Pyorrhœa Alveolaris.—I have cured many a case of pyorrhœa alveolaris and made a loose tooth firm by removing the pulp of the tooth and filling the root, in that way giving a better nutritional supply to the pericemental circulation. A tooth without a pulp stands a better chance of being immune from loss by pyorrhœa alveolaris than with a pulp that, in case of nutritional deficiency or other causes, would be constantly robbing the pericementum of the nutrient protoplasm which it requires for its healthy maintenance.—M. L. RHEIN, *Dental Cosmos*.

Retention of Loose Teeth.—For very loose lower incisors make a metal model, and upon it swage a band of gold to the lingual surfaces; then drill holes through the teeth, between the pulp and cutting edge, to receive a gold wire which is soldered to the plate. The plate is then re-enforced with a layer of solder, the rubber-dam put on, and the whole cemented firmly to place. The pins through the teeth are cut off even with the surface, so that no gold shows except the end of the little pin. The splint is far away from the gum, so that the tooth-brush reaches the interproximal spaces as though no splint were there.—J. D. PATTERSON, *Dental Digest*.

Pyorrhœa Alveolaris.—In the use of cocain in the treatment of pyorrhœa alveolaris a saturated solution of cocain in chloroform is preferred. Having one-quarter

ounce chloroform in a suitable bottle add fresh cocain, a little at a time, till saturated; a few drops of oil of cloves increases the solvent property so that we get a 10 per cent. solution. To guard against the harmful effects of the escape of the cocain solution on to the gums, lave the mucous membrane with whiskey, which neutralizes the effect of the cocain.—L. G. MITCHELL, *Western Dental Journal*.

Fixation of Loose Teeth.—Tie the teeth with "O" or "C" sewing-silk, making several knots in between the teeth as an entanglement for Kornarska's paste, for which the formula is celluloid, 155 grains; acetone, 500 grains. This makes a smooth, unctuous paste which will harden on the teeth in about two hours, or a little less. All colors of celluloid can be found at artists' stores. The sheets can be filed or ground up, or cut into chemically pure acetone.—A. W. HARLAN, *Dental Review*.

Pyorrhœa Alveolaris: Treatment.—In treating pyorrhœa, and in many diseases of the pericementum, we save much time and effect a permanent cure quicker by the use of a compressed-air atomizer, which enables the sending of uninterrupted streams of the desired medicament, as strong or as weak as the case may demand, into the deep tissues and down into pus pockets where it is most needed.—GEORGE ZEDERBAUM, *Dental Digest*.

Constitutional Effects of Pyorrhœa Alveolaris.—(1) Pus, with its putrefactive organisms, and decayed food remnants, may be swallowed and act either upon the stomach wall, or set up fermentation of the stomach contents.

(2) The toxins generated in the mouth may be absorbed by the mucous membrane of the mouth or stomach.

(3) The local conditions of the mouth may favor the growth of pyogenic organisms and thus render the patient more liable to certain infectious disorders.—CHAS. PEACOCK, *Dental Record*.

Treatment of Pyorrhœa Alveolaris.—After scaling and cleaning wrap a wisp of cotton round a fine broach, dip in a saturated solution of hydrate of potash, press lightly on amadou to take up excess, and pass carefully around the root, cauterizing the pocket, exercising care to touch only the affected tissue. Disappearance of pain is followed by the formation of new granulations, the pockets becoming shallower until a cure is obtained.—WALTER TOTHILL, *Dental Record*.

Pyorrhœa Alveolaris.—By putting a band around the neck of the tooth, letting it extend well up, cutting it first to the gum line, wherever that might be, cutting down to the gum line as though the gum margin were in proper place, and fitting the band well down under the margin of the gum, in order to change the conditions completely. If you fit the band snug around the root it will get well because the conditions are changed, although no amount of *treating* can make it well.—W. H. TAGGART, *Dental Review*.

Gold and Silver Salts in the Treatment of Pyorrhœa Alveolaris.—It is well known that a root discolored by silver nitrate seems less likely to take on deposits afterward.

* * * I have been using gold chlorid for a couple of years in the place of silver nitrate; the latter in a deep pocket is decidedly irritating, and may cause inflammation, while with gold chlorid we get the same good effects without the irritation.—W. V. B. AMES, *Ohio Dental Journal*.

Pyorrhœa Alveolaris.—All teeth which are loose must be fixed in their positions and bad occlusion corrected. The spring splint has given great satisfaction, swaging a piece of gold plate to the palatal and labial or the buccal and lingual surfaces, according to location, and uniting them with platinum and iridium spring wire. This, when snapped over the teeth, secures them and is easily removed for cleaning.—GORDON WHITE, *Items of Interest*.

Nitrate of Silver in Treating Pyorrhœa.—After the surgical operation we find the necks of the teeth extremely sensitive. Cold air hurts and it is extremely disagreeable for the patient; and there is nothing which gives relief like nitrate of silver. Keep a fresh saturated solution and apply it by means of shreds of cotton wound on an orange wood stick, protecting the gums and mouth with cotton rolls. The stain will wear off in a few weeks and the teeth will have recovered from sensitiveness.—J. D. PATTERSON, *Dental Era*.

Cataphoresis in the Treatment of Pyorrhœa Alveolaris.—Cataphoresis affords an effective way of saturating the tissues with antiseptics by virtue of the osmotic effect brought about; it is the most thorough method of destroying bacteria; it stimulates the tissue to repair and the bone to reform about the roots of the loosened teeth. However, no results will be attained of a permanent nature if the salivary deposits are not completely removed. Argyrol is advised when nitrate of silver would be indicated.—E. STURRIDGE, *British Dental Journal*.

To Harden the Gum-tissue.—After thorough removal of all deposits in the treatment of pyorrhœa, to harden the gum-tissue and tighten the teeth glycothymolin in combination with citrate of lithia will be found well suited for this purpose. Throw the solution deep into the pockets, and instruct the patient to apply it several times a day, with the little syringe known as the glycothymolin applicator.—JOHN P. RUFF, *Dental Era*.

Silver Nitrate in Convenient Form for Treatment of Pyorrhœa Pockets.—Fuse crystals of silver nitrate on the end of a wire. Quite a bulb of the fused salt can be made to adhere by heating the wire and touching it repeatedly to small crystals, passing them through a flame to fuse them. Applied to moist surfaces solution of the salt will take place on contact.—J. MORGAN HOWE, *International Dental Journal*.

Chlorethane in the Treatment of Pyorrhœa Alveolaris.—During the period of treatment of pyorrhœa alveolaris, chlorethane acts as a powerful antiseptic, as well as a local anæsthetic, both of which effects are desirable in the treatment of this disease. It also permits continuing the operation of removing deposits from the roots of the teeth as long as possible, without fear of toxic effects.—C. H. OAKMAN, *Dental Review*.

The Silver Salts in the Treatment of Pyorrhœa Alveolaris.—In the treatment of pyorrhœa alveolaris the organic silver salts are worthy of the highest praise. They do not discolor the tissues, they do not coagulate albumin, and they do not act as caustics. They should be applied in very concentrated solutions, or even in substance, deep in the pockets, by means of a platinum loop.—HERMANN PRINTZ, *Dental Era*.

Hot Water in the Treatment of Pyorrhœa Alveolaris.—Hot water is only beneficial in the treatment of pyorrhœa alveolaris. Keep a thermometer in the distilled water, keeping it between 135 and 145 degrees; if you go to 150 it will scald; do not let it drop below 130 degrees.—DR. CRENshaw.

Silver Lactate in the Treatment of Pyorrhœa Alveolaris.—Silver lactate (actol) is a white, inodorous, tasteless powder, soluble in water—1 in 100 destroys within five minutes all pathogenic microbes. I have used it in supuration pockets along the sides of roots of teeth with excellent results. It does not cause pain when used up to 20 per cent.—A. W. HARLAN.

Treatment of Pyorrhœa Alveolaris.—Very often, when the trouble is not deep-seated or aggravated, most excellent results are secured by cleaning the teeth thoroughly and packing quinin sulphate under the free margin of the gum around the necks of the teeth. This has a stimulating effect and will tend to tighten the teeth in their sockets.—FRED A. PEESO, *Dental Cosmos*.

Pyorrhœa Alveolaris: Lactic Acid.—Employ lactic acid in some cases where there is much necrosis of the alveolus, and where a powerful hyperplastic inflammatory reaction which will at the same time separate the necrotic bone from the healthy tissue is desired. The introduction of lactic acid is quite painful, and wherever employed anæsthetize the surroundings by the use of cocain phenate. C. F. W. BÖDECKER, *Dental Review*.

Protection of Pyorrhœa Pockets.—Dry the roots with alcohol and place over the parts bits of Japanese paper saturated with liquid celluloid, so as to form a protecting wall over the roots and edge of gum. Wind thread around and tie to prevent paper from getting out of position. The covering hardens and forms a perfect shield to the granulations which grow up and fill the spaces between the roots.—W. J. YOUNGER, *Dental Summary*.

Compressed Air in the Treatment of Pyorrhœa Alveolaris.—A blast of air inflates pyorrhœa pockets and renders visible the deposits which can be removed more accurately than if fished for all unseen; when dislodged they are successfully driven from the pockets by a blast of air, and the pockets sterilized by air passed through an atomizer containing the preferred antiseptic solution.—B. E. SANDERS, *Dental Summary*.

Precaution; Lactic Acid in Pyorrhœa.—Protect gums, mouth and lips by the application of oleo-stearate of zinc. It is exceedingly grateful to the mucous membrane and coats the teeth, protecting any sensitive points that may be exposed. Then you can use lactic acid with perfect immunity.—W. J. YOUNGER, *Dental Review*.

Zinc Sulphate in the Treatment of Pyorrhœa Alveolaris.—After thorough cleaning of pockets and roots, warm beeswax in warm water, and incorporate zinc sulphate to form a paste, with which pack the pockets. As the pockets fill in with granulations from the bottom, the plug is forced out.—*Dominion Den. Jour.*

Electrolysis in Chronic Pericementitis.—To a saturated solution of potassium iodid add about one-fifth the quantity of equal parts tincture of iodine and aconit. Saturate a pledget of cotton with this, and apply by means of the rubber-cup electrode to the inflamed region. About one milliamperere of a ten-cell current for five minutes will be sufficient; and usually one application is all that is required.—J. M. FOGG, *Dental Cosmos*.

Mouth-wash for Pyorrhœa Patients.—After scaling, etc., prescribe the following mouth-wash, to be used twice daily, twenty drops in a glass of water :

R. Hydronaphtholgr.-xv
Alcoholis
Aquæ dest.ãã ʒi. M.

—JAMES TRUMAN, *International Dental Journal*.

Pyorrhœa Alveolaris, Very Bad Cases.—When the tooth is extremely loose, the pockets very extensive, reaching the apex of the root at various points and containing pabulum as well as pus, the alveolar process practically all absorbed, the pulp dead, and pressure upon the tooth causing pain, the remedy is *extraction*.—E. C. BRIGG, *International Dental Journal*.

Pyorrhœa Alveolaris.—As a mouth-wash after the removal of deposits equal parts of thre per cent. of pyrozone and one-fourth per cent. solution of hydronaphthol is an excellent combination. The slight amount of acid present appears to have no detrimental action, for wherever tartar is forming there is an alkalin reaction.—A. C. HART, *Dental Cosmos*.

Loose Teeth.—In a large percentage of cases if the periodental membranes and gums are freed from infectious accumulations the loose teeth will tighten, and the stripped gums will of themselves reattach to the roots. The one and only effective means of removing these infectious masses is by instrumentation and polishers.—JOSEPH HEAD, *The Dentist's Magazine*.

Pus Pockets: Argyrol.—When pus pockets are found, after removal of deposits and syringing with warm water a twenty per cent. solution of argyrol is used, freely injecting into the pockets. The argyrol is a thorough non-irritating disinfectant and invariably prevents soreness following the surgical treatment, and is the only drug necessary in the treatment of pyorrhœa and from a good mouth-wash for continuous use.—AUSTIN F. JAMES, *Dental Review*.

Sulphate of Quinin in Pyorrhœa Alveolaris.—Sulphate of quinin has been, as a local application, one of the most valuable therapeutic agents. Its topical effects have been tested to a degree that warrants its continued use. The pockets must be closed to the ingress of pathogenic germs, to permit the natural restoration of tissue, and this agent must be non-irritating and antiseptic in character.—JAMES TRUMAN, *International Dental Journal*.

Protection of Pyorrhœa Pockets.—Dry the root with alcohol and place over the parts bits of Japanese paper saturated with liquid celluloid, so as to form a protecting wall over the gum margins and around the tooth. Tie to place with thread and allow to harden. This forms a shield and protects the granulations, which soon form and build up new tissue.—W. J. YOUNGER, *Dental Summary*.

Trichloroacetic Acid in the Treatment of Pyorrhœa Alveolaris.—I use a 2 per cent. solution, getting first an astringent effect, preventing much hemorrhage, and second, an anæsthetic effect. Use on a few shreds of cotton wrapped on a scaler and left in place for a short time. Deposits are removed with less pain than by any other method tried.—E. MAWHINNEY, *Dental Review*.

Treatment of Alveolar Abscess by Electrolysis.—The fluids of the body being saline, mainly chlorid of sodium, the application of a point of zinc wire into a sinus or fistula with the aid of the electric current, chlorid of zinc is formed in situ, which is forced into the tissues—an ideal method of infusing an escharotic into a confined area.—W. J. MORTON, *Items of Interest*.

Pyorrhœa Alveolaris: Mechanical Treatment.—Sometimes there are sections of the cancellated alveolar structure truly carious; the *bone* should be examined and soft portions burred or scraped out. This is just as important as the removal of deposits from the roots of the teeth. Many persistent cases will yield promptly after the removal of disorganized alveolar wall.—GARRETT NEWKIRK, *Dental Review*.

Extraction and Replantation as a Cure for Pyorrhœa.—When advanced, with no connection between roots of tooth and maxilla, the tooth was extracted, the pulp removed, the tooth sterilized, apex of root amputated, canal filled, socket deepened and tooth replanted. The tooth was subsequently found to be firm and in good condition. Ligate with silk ligatures instead of using mechanical splints. In case of hemorrhage after extraction use sulpho-naphthol and hot water.—R. H. COOL, *Pacific Stom. Gazette*.

Treatment of Pyorrhœa.—After removal of deposits instruct patients to rinse mouth frequently with alum or borax dissolved in rain water, and abstain from soap or soda in dentifrices. Pulverized sulphur makes the best dentifrice for these cases. It is unpleasant, but impress patients with its importance, and for a term of weeks at least.—J. E. CRAVENS, *Dental Review*.

The Treatment of Pyorrhœa Alveolaris.—(1) Dissolve zinc sulphate to saturation in cold water. (2) One ounce of potassium iodid in two ounces of water, adding as much iodine crystals as it will take up. Put together equal quantities of the two solutions.—E. A. BOGUE, *International Dental Journal*.

Pyorrhœa Pockets.—Packing pyorrhœa pockets with menthol crystals a few minutes in advance of operating in the treatment of pyorrhœa alveolaris will afford great relief to the patient. Valuable in case of cocaine contraindication and in every way a more pleasant application.—*Dental Review*.

Pyorrhœa Alveolaris: Treatment.—To lessen the pain during operation make use of a concentrated syrupy solution of cocain phenate applied under the gum on a piece of cotton for four or five minutes. This is the safest of all the cocain preparations. The carbolic acid to a certain extent prevents absorption of the cocain, while the cocain, if the solution is saturated, inhibits the action of the carbolic acid.—C. F. W. BÖDECKER, *Dental Review*.

Pulp Removal in the Treatment of Pyorrhœa.—In pulp removal in so-called sound teeth, as a measure of treatment in pyorrhœal mouths, three obstacles to success may be encountered. First, there is great probability of pulp-calcification; second, hemorrhage is a common sequence; and third, and most important, the socket being already in an infected condition, apical abscess is a not improbable sequence.—R. OTTOLENGUI, *Dental Cosmos*.

Glutol in Pyorrhœa Pockets.—Glutol is well worth trying, especially for cleansing pockets after the tartar has been removed. The solvent action of the living tissue dissolves the gelatin, liberating the formalin, which is the antiseptic factor. It is of great value in controlling microbic activity in infected surfaces. It is harmless even if swallowed in large quantities.—R. H. M. DAWBARN, *International Dental Journal*.

Pyorrhœa Alveolaris.—I have had very good results from the electrolytic effect of pure silver, using the ordinary cataphoric apparatus and a spatula of pure silver, thus obtaining the oxychlorid of silver. I think this is a therapeutic field worth investigating.—M. L. RHEIN, *Dental Cosmos*.

Pyorrhœa Alveolaris in Young Children.—It is not an uncommon thing to find pyorrhea alveolaris in a very young child, because young children are prone to nephritic troubles. The presence of albumen in the urine of young children is very common. Pyorrhea in children is more common than our literature would show.—M. L. RHEIN, *Dental Cosmos*.

Pyorrhœa Alveolaris: Common Salt.—In a case which had resisted treatment for a great many years, after the loss of many teeth a cure was effected through the use of common salt worked down into the pockets several times a day, salt being also used on the tooth brush. The gums became solid and healthy and recession stopped. The loose teeth became so firm that they were used as supports for a bridge.—E. H. ALLEN, *Dental Review*.

Pyorrhœa Pockets.—I am in favor of washing out pockets with a solution of bichlorid mercury in hydrogen peroxid. I recognize the tendency of the sublimate to deposit in using pyrozone, but in Marchand's Hyper. there is sufficient free acid present to avoid this difficulty. I believe in the efficacy of this solution.—M. L. RHEIN, *Dental Cosmos*.

Plastic Injection for Pyorrhœa Pockets.—

R. Vaseline	1 oz.
White wax	½ oz.
Hydronaphthol	15 grs.
Menthol	3 grs.

To be injected into pyorrhœa pockets to keep them free from infection.—GEO. F. EAMES, *International Dental Journal*.

Removal of Calcic Deposits.—The use of iodine to soften and stain the deposits will facilitate their removal. It is also disinfectant. Should the gums and peridental membrane be hypersensitive the application of a cocain solution in adrenalin or equivalent will greatly relieve.—C. B. RORLAND, *Dental Review*.

Papain in the Treatment of Pyorrhœa Pockets.—If after removal of deposits papain paste is packed in the pyorrhœal pockets it will digest all blood-clots, etc., and will not discolor the tooth. The paste is composed of equal parts of papain and glycerin, and hydrochloric acid one-fiftieth to one-three-hundredth.—A. W. HARLAN, *Dental Review*.

Retention of Loose Teeth.—Where but very little attachment is left the condition may in many cases be improved by the removal of the pulp, thus concentrating the circulation and increasing the nutritional supply of the capillaries feeding the pericemental tissues.—M. L. RHEIN, *Dental Review*.

Suprarenal Capsules in Pyorrhœa Pockets.—When hemorrhage interferes with removal of calculus, a little of the powdered extract packed into the pocket will soon cause hemorrhage to cease. Either pack it dry or use it on a moist piece of cotton.—ELLIOTT R. CARPENTER, *Dental Review*.

Pyorrhœa Precautions.—Insist upon a discontinuance of the use of coffee or alcoholic stimulants, because they retard the elimination of waste material. Also the patient must not use any dentifrice or soap that is of an alkaline nature. L. G. MITCHELL, *Western Dental Journal*.

Pyorrhœa Alveolaris Pulp Removal.—Do not hesitate to remove the pulp from any of the teeth greatly affected, when there is enough bone remaining to justify an effort to save the tooth. I have rarely known a case that was not benefited, and the usefulness of the tooth prolonged, by the removal of the pulp.—GORDON WHITE, *Dental Digest*.

Pyorrhœa Alveolaris.—A line of "continuous, mild medication" which has proven efficacious consists in placing silver bands about the roots of the teeth, to furnish silver salts for their typical effect.—W. V. B. AMES, *Dental Review*.

Pyorrhœa Alveolaris: Gum Massage.—Instruct patients to massage the gums frequently, using the following preparation: Lanolin, one ounce; boracic acid, forty grains; a few drops of some essential oil. Any tendency to bleeding will soon disappear.—*Dental Summary*.

Pyorrhœa Pockets.—After thoroughly cleansing the roots, fix the teeth firmly with ligatures or splints and pack the pockets full with quinin sulphate as an antiseptic dressing. The quinin will exclude bacteria and cause the gums to become reattached to the peridental membrane, or tooth substance.—JOSEPH HEAD.

Pyorrhœa Alveolaris: The Water Cure.—When I have gotten my patients to drinking water I think I have accomplished much toward the cure of this dreaded gum disease.—C. N. PIERCE.

Silver Nitrate in Pyorrhœa Pockets.—Protect the gum by a preliminary application of tincture of iodine; if the nitrate of silver spreads it will form a painless iodid.—L. VAN ORDEN, *Western Dental Journal*.

Wash for Pyorrhœa Pockets.—Use tar water and hamamelis, half and half. Always have it warm.—DR. GOOD, *Dental Review*.

Hydronaphthol Wash for Pyorrhœa Alveolaris.—

R. Hydronaphthol	fl. 3ij
Tinct. Celandula	fl. 3iv
Aq. dist. q. s. ad.....	3viii

—GRAFTON MONROE, *Dental Review*.

CHAPTER X

OPERATIVE DENTISTRY — MISCELLANEOUS

Denuded Necks of Teeth.—If the patient is still young enough, say under forty, you can coax the gum to grow and recover the root in part, by great care and stimulating it gently with iodine and zinc oxid with ten per cent. resorcin painted on it at intervals of one to two weeks. This is very tedious and requires much patience. The remedies must be alternated and changed about every six weeks. During the process of building gum-tissue the patient must use a badger brush and a dentifrice composed of one part white castile soap and nine parts precipitated chalk.—A. W. HARLAN, *Items of Interest*.

Shaping the Natural Teeth.—When elongation has occurred, the entire incisal third may often be removed, cutting by stages, and using chlorid of zinc where sensitiveness is encountered; this to be followed by a constant use of bicarbonate of soda by the patient. My experience shows no trouble from such treatment, care being taken that the surface stoned and shaped be highly polished and burnished. This is essential. Use emery, rotten and Arkansas stone, followed by pumice and whiting, the latter carried on moosehide. Finally, the burnisher is used.—B. HOLLY SMITH, *International Dental Journal*.

Restoration of Bicuspids.—If the buccal face has broken away, the tooth being pulpless, select a cross-pin porcelain facing and grind to fit the buccal aspect of the tooth just under the edge of the gum. Fit the pins of the porcelain into a narrow scrap of platinum, leaving on for a screw to

pass between. Cement the screw into the root, place the porcelain in position with the pins embracing the screw, and surround the whole with a matrix; pack amalgam into the matrix about the pins and into all the irregularities of the palatal wall. Remove matrix next day and finish up the amalgam.—E. L. DAVENPORT, *International Dental Journal*.

Pericementitis.—In all cases of acute pericementitis, I have found cataphoresis, with the use of the copper electrode, to give immediate relief, leading to a speedy cure; also in cases of chronic soreness of teeth filled to the apex. Use a point of copper similar to a root dryer. Place in pulp cavity a saline solution, insert point attached to the positive pole, using as strong a current as the patient will bear with comfort, for about five minutes. A flat piece of copper shaped like a trowel, soldered to an electrode stump, applied to cotton saturated with a salt solution, laid on the gum, will usually give satisfactory results.—S. T. KIRK, *Indiana Den. Jour.*

Mouth Breathing and Tartar Formation.—I think there can be no reasonable doubt that *mouth-breathing* is related to tartar formation, at least as a contributory factor. The constant interchange of air currents brought about by mouth-breathing necessarily tends to cause evaporation of films of saliva and mucus upon the teeth. This, on the one hand, would result in loss of the dissolved carbon dioxide of the saliva, with consequent precipitation of lime salts in a mucoid medium concentrated by evaporation, or impissated by the loss of water, with the final effect of tartar formation upon the protected tooth surfaces.—E. C. KIRK, *Items of Interest*.

Pyo-destructive Pericementitis. — The predisposing cause is very frequently a malocclusion, often not observable. A slight deviation from the normal position in the arch is sufficient to cause the tooth to perform an amount of work greater than its own normal share. This leads to overactivity, massive oxidation, disease of alkalinity, and

probably to the formation of lactic acid, and finally to the precipitation upon that area of the uratic salts held in solution in the blood by virtue of its alkalinity. Treatment should include absolute relief from pressure upon such tooth during mastication.—JULIO ENDELMAN, *Dental Cosmos*.

In Case of Perioemental Inflammation.—When teeth containing putrescent pulps involved with pericemental inflammation and great tenderness, are to be drilled into, the tooth should be braced, either with a clamp or modeling compound formed about it and chilled when it can be so held in place as to support the tooth and prevent the pressure in drilling from causing pain. Sharp instruments and burrs afford the most effective aid to other means employed for relieving sensation.—B. HOLLY SMITH, *Den. Digest*.

Restoration of the Enamel Surface.—After the lapse of years of usage the enamel is so affected by the contact of hard food substances and of acids, whether used as condiments or medicaments, that the surface is no longer normal enamel. Being so roughened it retains food *débris* and invites decay. But this disorganized disintegrated layer can be removed, and the surface polished and restored to its original brilliancy and smoothness, shedding extraneous matter like water from a duck's back, thus preventing decay.—W. J. YOUNGER.

Treatment of Erosion.—*General:* Antidiuretic, anti-rheumatic, antigouty. *Local:* Use of soft brushes at the level of the erosion; use of alkaline dentifrices; use of antacids, gum arabic, or saccharin. *Surgical:* Ignipuncture of the labial glands. *The teeth:* Treatment directed against the sensitivity of the erosion; cauterization with silver nitrate, or with antimony chlorid with the advantage of not staining the teeth. Fill erosions with gold preferably, or protect with metallic crowns.—LEON FREY, *Dental Cosmos*.

Eruption of the Third Molar.—Experience has taught me that if all the twenty-eight teeth are in the mouth when the time arrives for the third molars to appear, there is trouble in at least fifty per cent. of these cases, by delayed or impossible eruption of the third molars, but when the first molar has been removed before the age of twelve no living dentist has observed any difficult or delayed eruption of the third molar.—J. D. PATTERSON, *Western Dental Journal*.

Nearly Exposed Pulp in First Permanent Molars.—When a child presents at the age of eight years, when the foramen is large and the filling of the root would leave the tooth in poor condition, with the pulp of the first permanent molar exposed, cap with a paste made of pure oil of cloves, oxid of zinc, and iodoform (without any phosphoric acid). Although we object to the odor of iodoform I have never been able to find anything else that will give the same results.—ELGIN MAWHINNEY, *Dental Review*.

Retention of the First Permanent Molars.—The retention of the first molars until the second are ready for immediate eruption is very important, because they are the only teeth that are strong enough and large enough, and so placed in the jaws, as to be able to maintain the articulation and preserve the proper relations of the upper and lower jaws, and consequently the symmetry of the face, during the period while the deciduous teeth are being removed and replaced by the permanent set.—E. NOYES, *Dental Review*.

Removal of Pulp Nodules.—Anæsthetize the very sensitive pulp tissue with cocain and open more thoroughly. If the deposit adheres to the dentinal wall and obstructs the entrance to the canals, saturate a pledget of cotton with 50 per cent. sulphuric acid and seal in the cavity for twenty-four hours. This will form a line of demarcation about the nodule, and separate it from the walls of the tooth. If the pulp is still sensitive anæsthetize again with cocain.—D. A. HARE, *Dental Review*.

Tincture of Iodin for the Removal of Deposits.—Apply the dilute tincture freely to teeth and gums, which will constringe puffy gums, drawing them away from about the teeth and outline deposits, which might otherwise escape detection. It loosens deposits upon the teeth, insinuating itself into minute crevices and rough areas of the crowns. Follow the iodine with ammonia, which forms a colorless solution, leaving the teeth much lighter in color. Clean and polish the surfaces.—H. C. REGISTER, *International Dent. Jour.*

Pulp Stone—Diagnosis.—1. Such exertion as will increase the action of the heart will aggravate the trouble. 2. Sounding the tooth with a steel instrument will give the same result as an incipient periostitis. 3. Sudden closing of the teeth indicates periostitis. 4. Closing the teeth gently and biting ever so hard is not painful, and indicates that periostitis is absent. 5. Lateral pressure does not give pain as it would in a case with periostitis.—E. T. PAYNE, *International Dental Journal*.

Retention of Applications in Badly Decayed Teeth.—Prepare cavity with retaining grooves to cervical margins. Fill the cavity largely with cotton, over which pack a quick-setting amalgam for restoration of proximal contours. When hard, cut through to and remove cotton, giving direct and free access to the pulp chamber, permitting ready application of rubber-dam and easy medication of pulp or application of some paste.—O. E. INGLIS, *Stomatologist*.

Saving Devitalized Teeth.—A pulpless tooth, having been deprived of its principal source of nourishment, soon becomes brittle, and should be protected from fracture through leverage in mastication; this can be done by grinding away the occlusal margins, preventing excessive bearing upon the tooth and rendering it less liable to pericementitis; this will materially assist in saving it.—A. W. CHANCE, *Pacific Gazette*.

Pulpless Teeth and Neuralgia.—Teeth without living pulps are never the cause of neuralgia. All cases examined by Dr. G. V. Black indicate that there has never been one case resulting from teeth with pulp removed. When apparently otherwise, examinations have not been thorough and portions of living pulp were certainly present.—JAMES G. ATTERBERRY, *Western Dental Journal*.

For Temporary Dressings.—Soak a large piece of cotton in a chloro-percha solution. With gentle, steady heat evaporate the chloroform and cut up the hard mass into pieces of various sizes, which, when wanted, can be softened by warming over spirit lamp and packed into cavity. If required extra soft, as for over arsenical dressings, heat and dip in chloroform. They will be found useful also as wedges.—A. T. COUCHER, *Journal British Association*.

The Chemical Arrest of Caries.—I have used nitrate of silver in my laboratory experiments, and find that it made the teeth much more resistant to artificial caries. Chlorid of antimony will do the same without discoloring the teeth, but I doubt if it is safe to use it in the mouth.—S. A. HORKINS, *Bac. Lab. Harvard Med. School, International Dental Journal*.

Filling the First Permanent Molars.—First, the cavity must be extended to the terminals of all sulci; second, the filling must be made of gold if it be possible to insert a perfect gold filling; third, the filling must be made of pink gutta-percha if it be not possible to insert a perfect gold filling. In rare exceptional cases oxyphosphate may be used; fourth, the filling must never be made of amalgam.—R. OTTOLENGUI, *Items of Interest*.

To Give Relief in Case of Pulpitis.—In many cases the application of hot water to the neck, and above the ear, of the affected side, by means of heavy toweling—six or eight thicknesses, soaked and partially wrung out, will prove efficacious if continued for from five to ten minutes.—A. W. HARLAN, *Dental Cosmos*.

Oil of Cloves in Carious Cavities.—With rubber-dam in place desiccate cavity thoroughly, using absolute alcohol and warm air; then place in cavity a pledget of cotton saturated with oil of cloves and passed quickly through the flame, and direct a current of warm air on the cotton until the eugenol is completely volatilized.—J. P. BUCKLEY, *Dental Review*.

Decalcified Dentin.—Remove all that can safely be done short of actual exposure of the pulp. If large masses of decomposing tissues are found remove even if it causes exposure. The pulp will be safer under a capping of foreign material then when subjected to the influence of this infected and poisonous mass.—C. N. JOHNSON, *Dental Cosmos*.

Silver Nitrate for Arrest of Decay.—Advantages: Avoidance of painful, tedious, expensive operations; positive arrest of decay; conservation of larger amount of normal tissue. Disadvantages: Unsightly discoloration; liability of pulp irritation in deep cavities; irregularity and roughness of treated surfaces. The advantages greatly preponderate.—J. MORGAN HOWE, *International Dental Journal*.

Erosion.—Stop erosion at the neck of the tooth by means of porcelain fillings. Of course, the patient has to use milk of magnesia and take the ordinary precautions.—JOSEPH HEAD, *Items of Interest*.

To Hold Erosion in Check.—Rinse the mouth twice a day with alcohol. The stinging effect on the mucous glands changes the character of the buccal fluids and corrects the acid secretions.—DR. MERRIAM, *International Den. Jour.*

For Erosion.—A paste of milk of magnesia and prepared chalk, applied around the necks of the teeth before retiring, will remain longer than any preparation yet tried. Spread on a piece of thin muslin and placed under the lip at night it will be found efficient in very wet mouths.—*Dental Summary*.

Periodontitis.—Where a pulp has died without exposure periodontitis is apt to supervene when the tooth is opened up. If it is drilled into through a five per cent. solution of formic aldehyd there is practically no risk.—B. J. T. BENNETTE, *Dental Record*.

Removal of Calculus.—Before removing salivary or serumal calculus it will be found advantageous to apply tincture of iodine. A few treatments will tend to disintegrate the deposit and thus facilitate its removal.—E. M. S. FERNANDEZ, *The Dentist's Magazine*.

Removal of Tartar.—If 50 per cent. solution peroxid of hydrogen is prescribed as a mouth-wash for several days previous to operating, it will greatly facilitate scaling off heavy deposits of hard tartar.—WALLACE WOOD, JR., *Dental Hints*.

Nitrate of Silver for Superficial Decay.—Dissolve the nitrate of silver in alcohol and place in the solution coarse particles of asbestos. When dried, they form a convenient medium for the application of nitrate of silver.—DR. BLISS, *Pacific Gazette*.

Adrenalin Chlorid.—In cases where bleeding at the gum margin has been caused by removal of gum-tissue, partly filling the cavity, the hemorrhage is quickly checked by the use of adrenalin chlorid.—WM. PILCHER, *Dental Summary*.

Acetanilid in Toothache.—A saturated solution of acetanilid in alcohol with a few drops of oil of cloves forms an elegant preparation and meets many a demand.—M. G. PRICE, M.D., *Medical Summary*.

Injuries to the Mucous Membrane.—For painting those little breaks caused by the sharp edge of a denture use compound tincture of iodine.—*Dental Review*.

Mummifying Paste.—Take tannic acid and thymol, of each equal parts, with glycerol sufficient quantity to make a stiff paste.—*Dental Brief*.

Canker Sore Mouth.—Use trichloroacetic acid in the treatment of canker sore mouth, which is at times very troublesome and painful. One or two applications will usually be sufficient, using the acid in small quantity.—C. E. DRUMMOND, *Dental Cosmos*.

Treatment of Very Sore Teeth.—Great help follows the use of a string tied around the tooth, instructing the patient to draw on it until it is real tight. The effect will be a revelation.—F. MILTON SMITH, *International Dental Journal*.

Removal of Silver Nitrate Stain from Tooth.—Use nitrate of silver, but as that stains the teeth I change the nitrate into iodid of silver by the action of iodine; this in turn may be discharged by ammonia, leaving the tooth stainless.—H. C. REGISTER, *International Dental Journal*.

Utilizing Worn-out Burs.—Old, large, round burs, if cut down one-third of the distance to the shank, make a bur which is useful for making under-cuts.—H. S. WHIPPLE, *Dental Review*.

The Lancet.—Use lancets with solid metal handles only. They are easily kept clean. Keep the blade sharp and clean by inserting it into a cork when not in use.—HOMER ALMON, *Dental Review*.

Care of the Handpiece.—Disconnect the handpiece and dip it in a jar of alcohol containing 10 per cent. eucalyptus oil. That is the best solution for the purpose.—L. M. MARKHAM, *British Dental Journal*.

Cavities Extending Beneath the Gum-margin.—When it is impossible to force back the gum except by cutting and turning back the flaps, it seems preferable to fill that portion of the cavity which is out of sight with amalgam, and at a subsequent sitting finish with gold. Do this rather than wound the festoon of the gum by an incision, which invariably results in recession.—R. OTTOLENGUI, *Items of Interest*.

Treatment of Cavities Extending Beneath the Gum.—

When the whole proximal wall is involved and separation required, remove the decay, break down weak enamel walls, and pack with gutta-percha, instructing patient to chew on that side. A month later pack in more gutta-percha, and the teeth will soon be sufficiently separated and the gum tissue crowded away from the margins. Fill the gingival third and then insert a wooden wedge to maintain space.—J. E. NYMAN, *Dental Digest*.

Preservation of Molars Decayed Below the Gum Margin.—

Fit a band as though for a gold cap. Contour the part which is to restore the decayed portion by soldering gold or platinum sufficient to knuckle against the adjoining tooth. Solder to the inside of the band a platinum pin from a broken porcelain tooth, to project into the cavity. Adjust the band, fill the cavity with cement and finish the grinding surface with a porcelain block, pure gold or amalgam.—W. FARLEY, *Items of Interest*.

Hypertrophied Gum.—

When hypertrophied gum presents between teeth and overlapping edge of cavity to be filled, ethylate of sodium, applied with a pellet of cotton, will destroy the tissue; melting it into a gelatinous mass. It comes in the form of powder, which, dissolved in alcohol, forms a red, syrupy liquid, exceedingly corrosive.—S. GEORGE ELLIOTT, *Dental Review*.

Overcoming Recession of Gum Tissue.—

In case of recession of the gum over the root of an anterior tooth to be crowned, make a horizontal incision and put in a stitch in the part of the gum below the incision, tie it close to the tooth, the idea being that the gap will fill in with granulations.—DR. NASE, *Dominion Dental Journal*.

To keep a Gingival Margin Cavity dry without Rubber-

dam.—Place a napkin in position and saturate a little floss silk or small loosely twisted thread of absorbent cotton with thin cement. Dry the cavity, and pack this around under the gum margin.—R. E. SPARKS, *Dental Review*.

To Cleanse the Cement Slab.—Keep a bottle of ammonia water convenient for cleansing your cement slab and instruments.—A. M. JACKSON, *Dental World*.

Removal of Gum Tissue from Cavity.—Apply trichloroacetic acid, which destroys all organic matter (but not inorganic). It does not matter if it should touch the pulp. In a quarter of an hour you can cut away without any pain. In cases of difficult eruption of third molars, put a few crystals between gum and tooth.—*Dental Cosmos*.

The Gum Septum.—No matter how perfectly a cavity may be prepared and the filling adapted and condensed, the operation must be considered a failure unless the proximal surface is so contoured that perfect protection is afforded the gum septum and the retention of food prevented.—C. N. JOHNSON, *Dental Review*.

Overhanging Gum Tissue.—In pulp-canal preparation for crowning, in case of overhanging gum tissue a copper tack with a good supply of gutta-percha will usually leave a fair field after being in place some three days.—E. R. JEBBITT, *British Dental Journal*.

The Use of Floss Silk: Caution.—Some gums can stand any amount of irritation caused by floss silk snapping down from the contact point of the teeth and impinging on the gums, but in a mouth where the gums are easily irritated by any mechanical interference the use of floss silk should not be advised. If used with considerable force it may set up irritation.—HUGO FRANTZ, *Dental Review*.

To blow out the Chips: Compressed Air.—Wire around the engine cable down to the point of the hand-piece a small rubber tube; the diameter of the opening need not be more than one thirty-second of an inch. Turn on the air-pressure and go ahead with the drilling. The current will keep the point of operation in constant sight and free from chips, but will also prevent the bur from heating and thereby lessen both the pain and the duration of the operation.—GEO. ZEDERBAUM, *Dental Digest*.

Gum Tissue in Buccal Cavities.—When the gum has intruded into the cervical portion of a cavity, the excess of tissue may be burnt away with a minimum of pain by means of sodium ethylate.—DR. ROBERTSHAM, *Dental Record*.

A Simple Protector for the Hot-air Syringe.—The metal portion or end of the syringe may be covered with a piece of white rubber tubing of the same diameter; the tubing to be about an inch shorter than the metal end. When in use, the tubing is to be drawn up on the metal toward the bulb, exposing the tip for heating; after which the tubing is pushed out so as to cover the point, thus confining the heat and, being a non-conductor, effectually preventing the burning of the lips or mucous tissue.—FREDERICK CROSBY BRUSH, *Dental Brief*.

The Chip Blower.—A nice unique way of getting rid of the very disagreeable odor of the chip blower is to compress the bulb and inject a few drops of violet water through the tube, and the result will be most pleasing to the patient as well as to the operator.—F. G. PEIRCE.

The Gates-Glidden Drill.—In choosing drills select those that are made with the shanks tapering from the head to the shoulder, so that if a break occurs it will be at the weakest point, the shoulder, leaving the shank accessible so that it can be grasped with pliers and removed.—S. J. FERNANDEZ, *Dental Cosmos*.

Broach Holder.—To reach the anterior roots of lower molars, and the buccal roots of upper molars, I cut off the Donaldson broach in the middle and affix a ball of sealing wax to the end. It is easy to put on and gives good grip to the thumb and finger for rotating.—T. B. HINMAN, *Ohio Den. Journal*.

The Gates Glidden Drill.—Where the dentin is hard and resistant to the drill it is well to commence with a fissure bur, after which the drill will cut effectually. A small rose bur will be found useful in removing small obstacles in the base of the canal.—S. J. FERNANDEZ, *Dental Cosmos*.

Care of the Handpiece.—After the day's work take the jacket off your hand-piece and clean the bearing carefully; place the jacket and spindle in a drawer separately for a night's rest. In the morning a drop of oil, the parts put together and "it's just like new." Adjust the bearings when needed.—F. O. HETRICK, *Western Dental Journal*.

The Mouth Mirror.—A thoughtful and cleanly operator will never think of placing a mouth mirror in the mouth of a patient without first placing it in pure alcohol, there to remain until needed. It can then be dipped in water and dried with a napkin.—E. M. KAPITAN, *Dental Review*.

In Using the Mallet.—If you would have your patient thank you, use a piece of cork, trimmed square, between the teeth when inserting a gold filling. The impact of the mallet blows is less severe on a tooth thus supported by a cushion of cork.—*Dental Hints*.

To Deaden the Sound of a Mallet.—Tie over the plugger a hood made of several layers of rubber-dam. This will deaden the sound so disagreeable to many patients, apparently softening the blow.—G. H. CLAUDE, *Dental Cosmos*.

Burs and Mandrels.—Keep a small jar of vaselin handy in which to dip the shanks of burs and mandrels before putting them in the hand-piece. It insures easy working of the hand-piece and prevents the ingress of moisture.—R. H. MANNING, *British Dental Journal*.

To Hold Napkins in Place.—Clamp the napkin to a posterior tooth in operating on a superior tooth. This affords a dry as well as a very light field to work in, the white napkin reflecting the light to all parts of the cavity.—X. DODEL, *Pointers for Dentists*.

The Moustache.—To prevent the moustache from shutting out the light when not using the dam, take a strip of white muslin, an inch wide and three long, and draw the moustache back with it, fastening it with the dam-holder.—F. C. NOYES.

Dull Burs.—The inverted cone burs, when dulled, can be brought to renewed usefulness by grinding the end until the dulled corner is ground away and a new sharp corner is made.—DR. MATTHEWS, *Western Dental Journal*.

To Clean an Oil-stone.—Smear a flat block of wood with glycerin and fine pumice, and rub the stone, face down, till all traces of previous usage have disappeared. This will greatly improve the working qualities of the stone. To ruin an oil-stone clean it with kerosene.—*Odontographic Journal*.

Sodium Dioxid in Bleaching Teeth.—The best results can be obtained by placing the dry powder in the cavity of the tooth to be bleached and bring about the action by dropping distilled water on the powder. Place a thin platinum ribbon between the discolored tooth and the adjacent tooth, extending above or below the cutting edge, pressing warmed white gutta-percha against the lingual surface to form a pocket in which the powder is placed, using a little gold or platinum spoon. It can be worked into the root with a glass rod which has been drawn out to a point. The platinum ribbon can be so bent as to enclose the cavity while the reaction is taking place.—J. P. BUCKLEY, *Dental Review*.

Worn-out Gates-Glidden Drills.—When utterly worn out, drills can still be made to render useful service by grinding them to a spear-point upon the lathe stone. In this shape they are very useful in alveolar abscess, where it is to be approached from the outside, through the alveolar process.—S. J. FERNANDEZ, *Dental Cosmos*.

Filling after Bleaching.—Having restored the tooth to normal color, wash thoroughly and let dry slowly. When dry force a paste of precipitated calcium phosphate and distilled water up into the canal and burnish it against all exposed dentin. Dry this thoroughly and use a light colored cement as a basis for the final filling, which should be inserted before the rubber-dam is removed.—J. P. BUCKLEY, *Dental Review*.

Sterilized Brushes.—Tests with a large number of brushes showed that boiling them for ten minutes in a 1 per cent. solution of soda, keeping them afterward in a 1-1000 solution sublimate, sterilized them, in respect to the pathogenic germs usually encountered, with complete success and without injury to the brush.—A. WINTERNITZ, *Journal American Medical Association*.

A Substitute for the Diamond Disk.—A small disk of thin copper, used with water or oil, will cut as perfectly as a diamond disk, and even more quickly.—H. E. ROBERTS, *International Dental Journal*.

Scaling the Teeth.—Make a paste of:

White vaselin	3i
Cocain	grs. xiv
Menthol	grs. xxiv
Oil of peppermint.....	grs. x
Chloretone	grs. ix
Phenol	grs. ii

Before scaling the teeth, apply this antiseptic and anæsthetic paste by rubbing it into the spaces between the teeth and on the gums.—*Dentists' Magazine*.

Bleaching Teeth.—It is folly to expect a tooth to remain bleached unless the dentin is properly protected. The teeth which I attempt to bleach are those that have a good bulk of dentin which, if restored to its original color, can be protected by the remaining enamel and some filling-material, preferably porcelain.—J. P. BUCKLEY, *Dental Review*.

Painful Dentition.—Relief may be given by frequently washing out the mouth and rubbing the gums with the following preparation, which has proven very beneficial:

R. Eucaïn hydrochlorate	2 grs.
Chloroform	15 min.
Glycerin	6 drams.
Extract rosæ	5 drops.

—*Items of Interest*.

Bleaching Stained Enamel.—Apply the rubber-dam and dry with air as hot as the patient can comfortably bear. Then lay upon the stain a thin layer of cotton soaked in twenty-five per cent. pyrozone and place on it a broad, flat, hot instrument, so that the steam of the pyrozone will be driven into the enamel. Continue for about ten minutes. Then remove the cotton, and with a heated ball burnisher iron over the stain, driving out the pyrozone. Continue this for an hour, and then dismiss the patient, to return after an interval of not less than two days, to provide against possible disturbance of the pulp. Three or four such sittings usually give satisfactory results. If necessary, oxalic acid may be used at the last sitting, but the pyrozone is usually sufficient.—JOSEPH HEAD, *Dental Digest*.

Pulp-capping Paste.—

Trioxymethylene (paraform, triformol).....	16 gm
Pure vaselin	8 gm
Inert powder	6 gm
Cocain hydrochlorate	2 gm

Pitsch uses the above paste for capping pulps when in a healthy condition, and for filling pulp-canals after the ordinary antiseptic treatment.—A. ANDRÉ, *L'Odontologie*.

Aluminumized Gutta-percha Fillings.—

R. White gutta-percha	8 parts.
Aluminum filings	5 parts.
Oxid of zinc	1 part.
Whiting	½ part.

Easily manipulated, and when firmly packed holds its position well in the cavity without bulging.—F. W. BLISS, *Pacific Medical Dental Gazette*.

Devitalizing Paste.—

R. Arsenic	grs. xv.
Acetate of morphia	grs. v.
Wood creosote	q. s.

To make thin paste.

To which add enough powdered alum to make a stiff paste.—W. A. MILLS, *Dental News*.

PART II

CHAPTER I

PROSTHETIC DENTISTRY

CONSTRUCTION OF DENTURES, ENTIRE, FULL AND PARTIAL · MISCELLANEOUS INFORMA- TION—IMPRESSIONS

Magnesium Hydrate to Facilitate Removal of Plaster From Mouth.—If the remaining teeth are short and straight, and no wedge-shaped spaces or undercuts are formed between them, little difficulty will be experienced. When the teeth are long, or when they incline toward each other and form dovetail spaces, or when several teeth are loose, then the condition is more complicated and must be dealt with accordingly. A good expedient in all cases of impression-taking for partial cases is to have the patient rinse the mouth with milk of magnesia just before taking the impression.—J. F. Wessels, *Brief*.

Plaster Impressions.—Coat the tray with vaselin and cover with a layer of thin, but strong, gauze, previously soaked in water, allowing the gauze to project beyond the margin and over the sides of the tray. Let the plaster first poured be very liquid so that the gauze may rise slightly; when the tray is filled the gauze will be enmeshed in the plaster. Remove when thoroughly hardened. Though fractured, not a piece will be lost, all the sections being held together by the gauze, and an accurate reassembling of the pieces is readily secured.—*Dental Cosmos*.

Taking Impression of Mouth with Very High Vault.—A flat piece of copper or German silver plate, shaped like the outline of the letter U, and of size to approximately fit against the sides of the vault, some distance below its deepest portion, and to which is affixed a removable handle of heavy copper wire bent at right angles, is used to carry a body of plaster to the high, inaccessible part of the palate. When the plaster has hardened the handle is withdrawn, leaving the plate and plaster in position; the major part of the impression is then taken in the usual way, and the complete impression, in two pieces, removed and fitted together out of the mouth.—DR. TOMASKU, *Dental Record*.

For Removing Plaster Impressions from the Mouth.—The best instrument on the market for removing plaster impressions from the mouth is a wax spatula with one end pointed and the other broad and curved. After the tray is removed from the mouth, the pointed end of the spatula is used to groove the impression when it is desired to have it break, and then the broad end is introduced into the groove, and with a slight prying or twisting movement the fracture is accomplished, and the pieces removed. The curve of the instrument is well adapted for guiding pieces out of the mouth, as well as for hooking them out of the palate.—WM. ERNEST WALKER.

Impressions of the Lower Jaw.—When taking an impression of the lower jaw in either wax or modeling compound, it is necessary that the cheek on either side be pulled out by inserting the finger along the buccal side of the impression tray so as to lift out the fold of the muscles that may have been caught under the edge of the tray and material. The patient should also be instructed to raise the tongue from the floor of the mouth and extend it, so as to prevent the impression from impinging upon the muscles beneath the tongue.—J. F. WESSELS, *Dental Brief*.

A New Impression Material.—A specially prepared sealing-wax, made from pure lac, is recommended as combining all the essentials of an impression material. It is not liable to fracture, as does plaster; does not drag or bend on removal from the mouth; softens readily and remains plastic long enough to take any impression, or impression and bite combined. It is found to be all that could be desired, and superior to anything hitherto tried, and suitable to all the purposes for which such material is required.—JOHN GIRDWOOD, *American Dental Review*.

Relief of Sensitive Palate.—For a patient who cannot endure "taking an impression," trim a sheet of "dainty-wax" to proper outline, warm until it yields to pressure, and mold it over the palate and around the arch, in the form of a base-plate. It is smooth to the tongue, can be made thin and light, and with care can be worn long enough to accustom the wearer to the presence of something unusual in the mouth, as a preparation for taking an impression. Of course, it should be removed when eating.—W. D. COWAN, *Dominion Dental Journal*.

A Hint on Impression Taking.—Where impressions are taken of mouths having a high arch I have found it very helpful to insert a little plaster with a spatula before placing in the cup. It avoids the necessity for using a large bulk of plaster in the cup and simplifies the operation. In partial lowers, also, this same plan works admirably. But no matter what the case may be, if an accurate impression is desired plaster is by far the best material.—E. S. GAYLORD, *Dental Brief*.

Nausea Produced by the Insertion of Impression Material.—This tendency can be overcome by gargling with camphor water, or the use of a little cocain in solution on the palate, also by manipulating the palate with the end of the finger or a feather previous to taking the impression; a few doses of sodium bromid are also efficacious.—J. F. WESSELS, *Brief*.

To Remove Difficult Plaster Impressions from the Mouth.—Slightly oil the impression cup before pouring the plaster. When set hard, slip the cup off, and with a pointed spatula or knife cut grooves in the plaster, not quite cutting through. Following the grooves first break away the interior piece, then the lateral pieces. The remaining piece, covering the roof of the mouth, may then be readily worked loose. The four pieces are readily united again.—GEO. D. SETHERWOOD.

Partial Impressions.—To prevent adhesion of plaster to the teeth in taking partial impressions, request the patient to hold milk of magnesia in the mouth until the introduction of the plaster. Upon removal the impression will be found sharp and smooth. The film of magnesia adherent to the teeth prevents the plaster from sticking while hardening, but makes no appreciable difference in fit of plate.—H. H. JOHNSON, *Dental World*.

To Release a Plaster Impression.—The strong adherence of plaster to the roof of the mouth, sometimes encountered, is due to the plaster having absorbed the moisture from the tissues. The remedy is, when the plaster is quite hard, to insert nozzle of water syringe under the edge of the impression and gently force in a little water. Repeat all around, and the impression will usually drop down without pulling.—D. L. ABER, *Dental Digest*.

Accurate Partial Impressions.—Either the cup must conform very closely to the mouth or a preliminary impression of composition must be taken and, after being drilled out of the mouth, cut away slightly over the whole surface for the addition of a thin layer of soft composition for the final accurate impression, the hardened composition serving merely as an addition to the cup to force the soft composition into all the inequalities.—S. E. DAVENPORT, *International Dental Journal*.

Sterilized Impression Trays and Impression Material.—Impression trays should be thoroughly washed and polished when the impression material has been removed. Impression material may be effectively sterilized without damage by placing it in a double saucepan with a lid having a hole in it for a thermometer and keeping it at a temperature of 160° F. for an hour and a half.—J. H. BABCOCK, *British Dental Journal*.

Impressions for Partial Plates.—Take an impression with No. 2 modeling compound, and, while warm, trim out all the impression of the teeth, as well as part of the entire impression, undercutting around the rim. This makes a cup that fits the mouth exactly. Fill about half full of plaster and press home. Hold steady till it sets, and nine times out of ten you can remove without breaking.—L. E. JENKINS, in *Items of Interest*.

Taking an Upper Impression.—Having the grooves of the tray filled with the plaster and placed where it may be readily reached, fill the buccal and labial spaces, using a bone spatula to insure ease of application and cleanliness, working the plaster carefully under the cheeks and lips, and expelling all the air; then place the tray firmly in position and give sufficient time for the plaster to harden before the tray is removed.—ALFRED P. ROGERS, *Items of Interest*.

In Case of Gagging.—Dismiss the patient with instructions to massage the palate with the finger frequently. When this can be done without discomfort an impression can be taken, but until the patient can bear the finger on the roof of the mouth there is no use in making a plate.—H. D. MANN, *Dental Office and Laboratory*.

Partial Impressions in Plaster.—Vaselining the teeth, especially for a second impression at the same sitting, gives a sharper impression and greatly facilitates the removal of the plaster. Apply the smallest quantity of vaselin, in the meshes of a bit of cotton; this fully realizes all reasonable expectations.—*Dental Office and Laboratory*.

Lower Impressions.—Before pressing the tray down on the alveolar ridge direct the patient to raise the tip of the tongue to the roof of the mouth. This will draw the lingual muscles from under the tray, while the other muscles will be in normal position. This is particularly desirable in flat mouths.—FRANK FOUNT, *Dental Century*.

Impression Trays.—Faulty models are often the result of using an upper tray the rim of which is so high that it forces the lip upward, carrying with it the gum over the alveolus of the anterior portion of the arch. This is also often distorted by stiff plaster or modeling compound, which flattens or protrudes it.—*Dental Register*.

Impression Material.—An impression material which will take sharp, smooth impressions. For use in gold crown work mix fine plaster, 12 oz., with fine marble dust, 3 oz., and whiting, 1 oz.; tint with powdered carmine and flavor with oil of sassafras. Keep in a tight tin can.—W. T. WALLACE, *Items of Interest*.

Taking Impressions.—In cases which are extremely sensitive and easily nauseated, sponge the mouth with hydrogen dioxid and apply a 1 to 100 solution of eucain to the whole palate. This will relieve the most exaggerated cases of palatal sensitivity.—T. B. HARTZELL, *Texas Dental Journal*.

Upper Impressions.—If it is found difficult to remove an impression for full superior denture, have the patient close the lips and *blow* with sufficient force to distend the cheeks and the impression will drop down, no matter how tight it may have been.—R. C. TRAYNHAM, *Practical Dental Journal*.

To Prevent Adhesion of Impression Material to the Teeth.—Request the patient to hold a little milk of magnesia in the mouth for a few minutes. This will cleanse the teeth and mucous surfaces of adherent secretions and give a clear, sharp impression.—*Dental Office and Laboratory*.

Impression Plaster.—Oil of wintergreen added to dental plaster for impressions makes it less unpleasant to the patient. Use several drops for about six quarts of fine plaster; work it well and sift into the can.—JACOB SENTY, *Dental Century*.

Impression Plaster.—Where there are heavy undercuts, or teeth standing alone, mix with plaster of paris one-third its bulk of finely powdered pumice. It breaks readily, while giving as clear an impression as plaster alone.—LAURITZ BASGARD, *Items of Interest*.

Plaster of Paris Impressions.—Let the patient thoroughly rinse out the mouth with a little milk immediately before the tray is inserted instead of using vaselin or glycerin, either of which is objectionable to many patients.—H. W. GREENFIELD, *Ash's Quarterly*.

How to Make a Right and Left Lower Partial Tray.—Take an ordinary flat-bottom tray and with a hack-saw cut midway through the handle. This makes two good partials at the expense of one.—C. WESLEY SUFFIN, *Dental Brief*.

Plaster Impressions.—To overcome the unpleasant taste of plaster, add one or two drops of the oil of wintergreen, or eucalyptus, or peppermint, as the patient may prefer.—W. W. KEIZER, *Dental Record*.

To Relieve Tendency to Gag or Vomit.—Administer oxalate of cerium in one-grain doses, or the aromatic spirits of ammonia, one-half to two drachms in an ounce or more of water.—I. ROBERT MEGRAW, *Western Dental Journal*.

To Prevent Nausea in Impression Taking.—Dipping the tray into strong vinegar before inserting it in the patient's mouth will prevent any ordinary case of gagging.—*Dominion Dental Journal*.

To Make Partial Lower Impression Tray.—With hack saw cut midway through handle of flat bottom lower tray. This makes two partial at expense of one.—C. W. SIEFKILL, Rolfe, Iowa.

To Prevent Nausea When Taking Impressions.—Have the patient thoroughly rinse the mouth with brandy or alcohol and water, half and half. This will benumb the tissue so efficiently as to prevent retching in all but the very worst cases.—MARK HAYTER, *Ohio Dental Journal*.

To Remove Plaster Impression from Impression Cup.—Cut off overhanging surplus; hold the cup over a flame, and the plaster will fall out.—*Dominion Dental Journal*.

To Prevent Gagging.—Bathe the roof of the mouth with a menthol solution applied on a pledget of cotton before inserting the impression tray.—*Dental Summary*

Impression Taking.—In proportion as it would be difficult to remove an impression, plaster of paris becomes needful.—R. OTTOLENGUI, *Dental Cosmos*.

PLASTER CAST—ARTICULATING MODELS

To Mend Broken Plaster Casts.—Paint the broken surfaces over two or three times with very thick shellac varnish, and at each application burn out the alcohol over a flame. When the shellac is sufficiently soft, press the parts together and hold in position till cool. It will be as strong as before breaking.—*Atlanta Dental Journal*.

Repairing Broken Plaster Models.—Attach weak or broken models to be articulator by setting in a soft mat of modeling composition, instead of a mix of plaster. They are easily detached by softening the composition in hot water, while in separating from plaster breakage is almost sure to occur.—B. H. TEAGUE, *Dental Hints*.

To Secure a Perfect Plaster Cast.—Never pour newly mixed plaster on an impression without first thoroughly soaking the latter in water. If this is not done the dry impression will absorb the water from the freshly mixed plaster, while the displaced air from the former, being forced into the latter, results in an imperfect cast.—D. D. ATKINSON, *Am. Den. Weekly*.

To Separate Cast from Impression.—When dry stain the impression with thin shellac. Spread a thin film of wax along the edge of the impression and soak for two or three minutes in a solution of soap. Just before pouring wash off the soap with a dash of cold water. Dry well, then immerse for a minute or two in boiling water. The impression can be easily broken from the cast.—W. BUZZELL, *Ohio Den. Journal*.

"Taking the Bite."—Chill the wax on the rim and try in the mouth, cutting the wax down until the antagonizing teeth all touch, and the mouth when the lips are closed assumes a natural appearance. Remove and place a layer of softened wax on the hard rim; when the teeth are closed they cannot penetrate into the hard portion, and you will have maintained the desired distance apart.—J. C. CURTIS, *Dental Cosmos*.

To Utilize Cuttings of "Ideal Base Plate."—Put the scraps in a small pan, which place in a larger pan with sufficient water in the latter to cover all. Use a glazed tile or glass slab as cover. Boil until the base plate is quite soft. Place the mass on the cover while both are still hot and roll with porcelain roller and cut into squares. Better than when new, as it is less brittle.—JOHN CROMAR, *The Dentist*.

Impressions and Bites.—In taking impressions and bites in wax or gutta-percha or modeling compounds, requiring heat for their plasticity, turn on compressed air and you cool off the mass in a minute, getting a sharper impression as the result, and the patient will not spoil the impression by involuntarily closing the mouth or changing the relative position of the jaws in case of bite.—GEO. ZEDUHANNE, *Dental Digest*.

To Make Hard Plaster Models.—Mix the plaster of Paris with one-sixth of its volume of pulverized slaked lime. After the model is dried place it in a 10 per cent. solution of zinc sulphate until it is thoroughly saturated. Remove and dry.—*Dental Era*.

A Cause of Faulty Articulation in Dentures.—One source of danger lies in the flask. When a flask has been used for some time the guide-posts become worn or corroded and cannot be relied on to draw the two sections of the flask together in exactly the same position as before removal of wax, and the cusps fail to intermesh correctly.—T. J. SPENCE, *Dental Cosmos*.

Trial Plates.—I much prefer a swaged plate made of block tin. They are made to the approximate thickness of the intended vulcanite, and I find them very satisfactory in adjusting to the mouth, in getting the articulation, and adjusting the teeth when they are waxed in place.—WM. H. TRUEMAN, *International Dental Journal*.

"Taking the Bite."—In taking a bite request patient to press the tip of the tongue tightly against the posterior border of the trial plate, impressing upon him the importance of keeping the mind on this procedure. After this ask him to close the jaws; the resultant bite is almost always correct.—HUGO FRANZ, *Dental Review*.

Taking the Bite.—It is much better to take an impression before extracting the teeth, cutting the teeth down to the gum line on the model. By taking the bite before extraction you get a correct closure of the jaws, and have a guide to go by. There is also less liability of soreness and inflammation.—W. H. WEAVER, *Dental World*.

Models from Plaster Impressions.—Varnish the impression with thin collodion; dust this surface with talcum, brushing away all loose powder with a large camel's-hair brush. The model made from this impression will have a hard, smooth, almost polished surface.—D. H. PAINE, *Items of Interest*.

Cement for Broken Casts.—Dissolve sheet celluloid in ether, making a thick creamy paste. Coat the broken surfaces thickly and hold together for a few minutes; allow to harden not less than three minutes before handling.—*Dental Weekly*.

Trial Base Plate: Arranging the Teeth.—Warm each tooth in the flame and then put a cold stick of wax against it until it melts, smearing the surface to be attached to the wax; this gives an attachment of the teeth to the base plate that moisture will not penetrate when trying the teeth in the mouth.—W. H. TAGGART, *Dental Review*.

Perfect Models.—To avoid the imperfections of poured plaster models galvanoplastic methods have given perfect satisfaction, with absolutely accurate results. There is but one drawback, and that is that it takes about eight days to make the model.—DR. POINSOT, *Dental Cosmos*.

A Correct Bite.—In taking a bite instruct the patient to extend the jaw as far as possible (as they always do); then have him relax the muscles and bite gently on the wax, and you will have a correct bite.—GUSTAVUS NORTH, *Cedar Rapids, Iowa*.

To Harden and Protect Plaster Casts.—In an ordinary cabinetmaker's glue-pot, melt in the inner pot *stearin*. Have the plaster model perfectly dry and warm and place it, for from five to ten minutes, in the melted *stearin*. When cool the model will be found to have a marbled appearance, and may be used for fitting clasps and bands without injury to the teeth.—WILLIAM MITCHELL, *Dental Register*.

To Keep from Losing Bite.—Before the bite is removed from the models on articulator, with an ordinary carpenter's compass extending from one model to the other make a slight depression with points. This will serve as a guide after the wax is removed if in any way the bite is lost.—C. W. SIEFKIN, *Rolfe, Iowa*.

Matrix for Pouring a Model.—Dip in melted wax until saturated a strip of tape two inches wide and about eleven inches long; allow it to cool. When wanted warm it slightly and place around the impression tray, to which it will conform without sticking to the plaster when poured, making a good matrix rim.—G. E. TRUITT, *Dental Cosmos*.

The Articulator.—All cases in bridge-work involving posterior teeth should be mounted and constructed upon an articulator which affords lateral movements, as many failures in bridge-work can be attributed directly to faulty occlusion, and success of all such cases depends largely upon the degree of accuracy in this particular.—H. J. GOSLEE, *Items of Interest*.

Handy Application of Varnish to Casts.—A pellet of cotton, held with a pair of pliers, is superior to a camel's-hair pencil, for applying varnish and oil to casts, etc., and there is not the trouble of loosened hairs.—*The Phagocyte*.

Repair of Broken Model.—Mend a broken model with thin oxyphosphate cement, allowing it to harden thoroughly. It will not break again in the same place.—*Dental Century*.

Porous Plaster Models.—Dust the surface over with soapstone, filling in the pores. You will then get a beautiful cast every time.—J. E. NYMAN, *Dental Review*.

Hard Models.—Alum makes models harder for rubber work.—*Dental Clippings*.

To Obtain Duplicates of Plaster Models.—Soak about 150 leaves of common gelatin in cold water for one or two hours, gradually adding four or five ounces of oil, constantly stirring. Place the model in an enameled vessel and pour the above mixture over it. After about three hours it will have hardened, when the model may be removed and any number can be poured.—F. A. B., *Dental Office and Laboratory*.

Matrix for Pouring Model.—A strip of tea lead, two inches wide and eleven inches long, makes a good matrix when pouring a plaster model in an impression. It conforms to the shape of the tray and does not adhere to the plaster.—C. Y. SIEFKIN, Rolfe, Iowa.

PARTIAL IMPRESSIONS

Wax for Partial Impressions.—Melt together one pound of beeswax and one ounce of resin and run it into a cake a quarter of an inch thick. Warm the wax, place in impression cup and push gently and firmly to place in the mouth. Cool in the mouth and remove; cut away to an eighth of an inch deep on all parts where the plate is to bear on the mucous membrane. Then roughen the surface by running a knife into the wax so that plaster will hold tightly to the wax; heat the cup so that the wax will adhere to it, and pour moderately thin plaster on such portions as require the best possible adaptability, but not into the depressions made by the teeth. Insert in mouth, with the teeth for a guide, and let it remain until the plaster in the bowl breaks with sharp fracture.—D. J. McMILLEN, *Western Dental Journal*.

Taking Impressions of the Lower Jaw with Modeling Compound or Wax.—When taking an impression of the lower jaw in either wax or modeling compound, it is necessary that the cheek on each side be pulled out by inserting the finger along the buccal side of the impression tray so as to lift out the fold of the muscles that may have been caught under the edge of the tray and material. The patient should also be instructed to raise the tongue from the floor of the mouth and extend it, so as to prevent the impression from impinging upon the muscles beneath the tongue.—J. F. WESSELS, *Dental Brief*.

Impression of Modeling Compounds.—Secure impression as usual. When hard, trim away surplus, soften surface (only), and while warm return to mouth and press firmly home.—W. E. ROBERTSON, *American Journal*.

Modeling Compound.—To marble dust add sufficient glycerin to produce a moldable material.—B. J. CIGRAND, *Dental Digest*.

Modeling Composition.—In spite of a rather general feeling to the contrary, the successful handling of composition requires quite as much skill as does plaster. The greater one's experience with it, the more positive becomes the opinion that the best results are to be obtained, when the least thickness possible of the softened material is used.—S. E. DAVENPORT, *International Dental Journal*.

Stanno-percha.—Stanno-percha is prepared by mixing in a mortar, in a sand-bath, equal parts of pink gutta-percha and sponge-tin and the two ingredients thoroughly rubbed until the whole mass assumes a greyish color. One-half of the mass is removed from the mortar for use as cavity lining; that which remains in the mortar is mixed with an additional amount of tin and used to complete the filling. It is not affected by friction, does not expand, becomes soft at a relatively low temperature, and does not adhere to the instruments.—ARTHUR SCHEUER, *British Dental Journal*.

VULCANITE DENTURES

Vulcanite Plates for Regulating or for Dentures.—The plaster model must be dry. Paint the surface to be covered by the plate with a solution of rubber in chloroform. Cut a piece of quick-vulcanizing base-plate rubber of about the size required, and after evaporation of the chloroform press it down on the painted surface, taking care that it comes in close contact in every part. Trim off superfluous edges, put in position the regulating parts, or the teeth if for a denture, warming the teeth and pressing them into place. Then cover the rubber with tin-foil and place in a lidded metal box of any kind large enough to hold the model, which must be surrounded with French chalk, packing lightly so as not to disturb the teeth or appliances. Fasten down the cover, with wire or otherwise, and vulcanize as usual.—GEORGE BRUNTON, *Journal British Dental Association*.

Forming the Gums in Plate-work.—After the teeth are waxed on, carefully remove all wax from between the teeth, using chloroform if necessary. Instead of carving the gums, lay on a strip of moldin close to the necks of the teeth. Punch holes in a piece of rubber-dam, pass the teeth through, draw the dam up and manipulate the moldin through the rubber, turning it back and adding more moldin when needed. This will form a very natural smooth gum. Flask with the rubber-dam covering the moldin; when the flask is opened to wash out the wax remove the rubber, carrying the moldin with it. Pack and vulcanize in the usual way. The gum will be found to have a good form with smooth surface and no points of rubber between the teeth.—T. C. WEST.

Aluminum Lining for Rubber Plates.—Take chloroform, three ounces; carbon disulphid, one ounce; powdered aluminum, one ounce. Before mixing the ingredients make a saturated solution of the chloroform and white vulcanite rubber. When the case is ready to pack give the model a good coat of collodion, and follow this with about three or four coats of the aluminum preparation.—BURDETTE L. CONWAY, *Stomatologist*.

Dissolved Rubber in Making Partial Plates.—Have two grades of solution—one quite thin, the other of a thick, syrupy consistency. The solvent should be very volatile—as chloroform, naphtha, benzine, etc. Keep in wide-necked, glass-stoppered bottles. Grind the teeth to fit gum accurately and hold in place by plaster of paris on labial and occluding aspects, pack a small portion of the thick solution around the pins; paint palatal portion of model with the thin solution. Dry and add other coats until the desired thickness is obtained; then trim with sharp knife to size and shape required. Invest and vulcanize—no flask required. Plate may be made as thin as paper and will show rugae clear and distinct. Tin-foil on both sides of the rubber is advisable.—WM. LOUISSE, *Penn Den. Journal*.

Mistakes in Vulcanizing.—The mistake is often made of not taking time enough. For most rubbers the instructions say "Run the temperature up to 320°." This is too hot. It is better to be an hour vulcanizing at 310°, or even less than that. I have many times consumed two hours in vulcanizing a plate. If, however, you are careful to run the heat up slowly, you can run it beyond 320°, even with heavy plates.—F. M. SCHRIVERS, *Dental Cosmos*.

Rubber-dam Lining for Vulcanite Plates.—When ready for packing first pack around pins and flange. Then cut a piece of red rubber, size and shape of cast and large enough to come up as high as will be required when finished. Cut a piece of new, clean, thin rubber-dam to fit the red rubber. Paint the latter all over one side with good rubber cement, apply the rubber-dam and press down smoothly, making sure there are no air bubbles. Place in flask with dam next to cast. Close the case by dry heat. Use paper vacuum form, as the dam will not harden over tin.—L. CROUTHER, *American Dental Journal*.

Vulcanizable Gutta-percha for Artificial Dentures.—In the use of vulcanizable gutta-percha instead of rubber no wax is used; there is no melting out of wax, no measuring the rubber, no screwing down the flask to break the model or displace the teeth; there is no carving of gums. It is less porous than red rubber, with, therefore, less risk of inflammation of the mucous membrane.—W. O. TALBOT, *Northwestern Dental Journal*, *Dental Brief*.

Vulcanizing Rubber.—The majority of rubber dentures are vulcanized at too high a temperature and in too short a time. A denture should be vulcanized at 280° or 290°—depending upon the rubber—for three hours after the vulcanizer has reached that point. In that time a thick lower denture can be vulcanized solid; you can saw right down through the mass and polish the cut surface, but you cannot do that if vulcanized at 320° for 55 minutes approximately.—DR. GRITMAN, *Dental Cosmos*.

Aluminum Lining for Rubber Plates.—Dissolve unvulcanized rubber in chloroform to a fluid consistency and add aluminum powder until the original rubber color is lost and the bright metallic color of aluminum prevails. After opening flask, paint the model with the aluminum mixture and pack as usual. Final effect of finished plate is good, and process prevents so-called "rubber sore mouth."—W. H. FOX, *Dental Review*.

Shrinkage in Rubber During Vulcanizing.—The amount of shrinkage depends not alone on the time the rubber is subjected to the process of vulcanization, but also upon the temperature. The lower the temperature and steam pressure, the less the loss in shrinkage and the less the contraction in cooling. Low heat and long time also insure an improvement in the texture of the product.—GEORGE B. SNOW, *Dental Brief*.

To Produce Rugæ in a Vulcanite Plate.—Take a good impression of a mouth with well-developed rugæ. Make a plaster cast from this and let it dry till it rings like a piece of metal. Cut a piece of heavy tin-foil and press down in the rugæ, following into the depressions with a burnisher. Turn the foil over and fill up the convex side with hard wax. Place on the wax of the plate and adjust carefully. When separated, the reverse of the rugæ will appear, and when vulcanized they will be nicely brought out, much better than by any attempt at carving.—J. B. HODGKIN, *Dental Digest*.

Grinding Porcelain.—Many operators seem to be afraid of grinding the labial surface of crowns for fear of destroying the lustrous surface of the facing. Grind any mutilate—so to speak—until you have obtained the desired shape; it can then be made smooth with fine sand-paper, and put on a buff of cotton batting, using pumice first, then whiting, which brings a gloss more in keeping with the adjoining natural teeth.—F. J. CAPON, *Dental Cosmos*.

Aluminum Lining for Rubber Plates.—Roll aluminum to 28 gage; anneal with blow-pipe till white like unburnished silver. Thoroughly dry the cast, and with the two thumbs press the aluminum to the cast, working from center to edges; burnish it to place. To secure adhesion of rubber, with chisel make rows of small hooks 1-32 inch long, running alternately till surface of plate is covered. Anneal again, and adjust to cast. Wax teeth and pack as usual. The pressure under the screw will make a perfect adaptation.—*Dominion Den. Jour.*

To Prevent Vacant Spaces in Vulcanized Rubber.—The expansion of rubber by heat between 200 and 320 degrees is a very close approximation to its shrinkage in vulcanizing, therefore, if, after the flask is closed by boiling it, the bolts are slackened so that the flask will part easily under the pressure caused by the expansion of the rubber as it is heated to the vulcanizing point, all the rubber which was in the mould when it was closed can be retained therein. Then, if spring pressure is applied and the flask closed after shrinkage has practically ceased, the rubber will, at the end of the vulcanizing process, remain closely applied to the teeth and the surfaces of the mould.—GEO. B. SNOW.

Velum Rubber in Plate Work.—In a case where the mouth was very flat and tender, and in which a plate made in the ordinary way will not "stay up," make a plate with the entire roof of the mouth of velum rubber, using hard rubber next to the pins and pink rubber for the gums. Vulcanize with tin foil on both sides, as velum rubber cannot be polished.—M. N. MIXON, *Dental World*.

Packing Vulcanite Plates.—In packing a vulcanite plate of single teeth I cut the pink rubber in small triangular pieces (Δ). I then dip in chloroform and press down in between the teeth. The sharp point on the triangle fits perfectly, and at the same time the chloroform retains it in position. By packing plates in this way you will be astonished at the pleasing results.—O. G. CRAWSHAW, Dawson, Pa.

Stippling the Gum.—After the pink gum is polished, go over the surface with the electric mallet (I use a point made from a broken cone-socket excavator with the end rounded and smoothed); this method enables you to distribute the stippling exactly as in nature, leaving the gum smooth at the immediate edge, with indentations made scatteringly over the roots of the teeth and very numerous between the roots.
—W. E. WALKER.

Vulcanizing on Tin.—Instead of covering the model with tinfoil, make, when it is possible, a tin model, preferably a tin shell, which has the advantage of being readily removed from the plate. A peculiarity is that rubber when vulcanized on tin is totally different from rubber vulcanized in contact with plaster. It seems to lose its weight almost one-half.—R. H. NONES, *International Dental Journal*.

A Device for Heating Rubber.—Don't soften rubber for packing on a metal cover over boiling or steaming water. All know how the rubber sticks to a thin or metal surface when the water gets a little too hot; how in a short time the cover is covered with little chunks and humps of cohesive rubber. Try a piece of clean pasteboard instead of a metal cover to warm rubber on and you will have no sticking.—J. K. RICE.

To Prevent Porosity in Vulcanized Rubber.—When, for restoration purposes, an unusual amount of rubber is necessary, making the plate very thick in some places, fillings of old vulcanized rubber incorporated with the new when packing will prevent bubbles and sponginess in the interior of the thick portions.—W. R. WRIGHT.

Separating Medium in Vulcanite Work.—Cut strips of tissue paper about half an inch wide, moisten and cover all the plaster, but not the wax or teeth. Pour the upper half as usual. Remove the tissue paper before packing. Applicable to any case, but especially advantageous in difficult cases. It is not necessary to wait for the plaster in the lower half to set.—J. H. NOBLE, *Dental Cosmos*.

To Determine the Amount of Rubber for a Plate.—After the case is invested in flask submerge the flask in boiling water for a minute and a half. This warms the wax just sufficiently for it to come out intact. Weigh the wax; the amount of rubber required is the weight of the wax and one-half more. In other words, a given quantity of rubber weighs one and a half times as much as the same bulk of wax.—H. N. WALTERS, *Dental Hints*.

Strengthening Rubber Plates.—A perforated metal if used to strengthen vulcanite plates should be placed in the middle of the vulcanite, as a metal plate on the surface is only a source of weakness. If the cost has to be considered, aluminum may be used, though the rubber does not stick to it as it does to gold.—E. LLOYD WILLIAMS, *British Dental Journal*.

"Strengthened Dental Rubber."—A toughened rubber, free from all brittleness and of very great strength, is produced by a process of rolling a sheet of metal gauze between two sheets of rubber, the metal being of a quality not acted upon by the constituents of the rubber. Used in one piece, roughly cut to the shape of the plate.—*Dental Record*.

Strengthening Vulcanite Plates.—The employment of metal devices for the supposed purpose of imparting strength to a vulcanite plate is an error, for in proportion to their bulk they displace vulcanite and thus weaken the piece, with greater liability to crack and greater difficulty of repair.—GRANT MITCHELL, *Ohio Dental Journal*.

To Give a Smooth, Finished Surface to Vulcanite.—After investing in the flask, remove the wax absolutely and paint the palatal and lingual surfaces with a mixture of liquid glass and silver bronze. When hard, cover with soapsuds to prevent adhesion to the vulcanite. The case will come out smooth, with a glistening appearance.—B. J. CIGRAND, *Dental Digest*.

The Flexible Ridge.—When a patient will not consent to the excision of the soft, flexible ridge which so interferes with the adaptation of a denture, place a layer of soft oxy-phosphate in the plate so that it will bear upon the ridge; after a few days put on some more, and pressure—atrophy will usually remove the ridge easily and successfully.—C. P. PRUYN, *Dental Review*.

Veneering Vulcanite Plates.—Pack as usual and open flask; stretch a sheet of vulcanite until quite thin and place it over the vulcanite in the flask; close and vulcanize. Red rubber can be veneered or lined with rubber in this way with beneficial results, producing beautiful plates.—W. J. ROBINSON, *Stomatologist*.

To Insure Easy Closure of Flask.—Dipping rubber in a mixture of one part of benzin to two parts alcohol before packing it makes flask closure a much easier operation and does not appreciably retard vulcanization. Close the flask with the additional aid of hot water.—*Dental Office and Laboratory*.

Quick Vulcanizing.—By using "Poulson's Quick Vulcanizing Rubber," allowing only 20 minutes at 335° F., dentures are quickly made, the rubber being elastic, tough and not burnt in any way. It will be found valuable for quick work.—W. J. TURNER, *Journal British Dental Ass'n*.

To Remove the Cloth Adherent to the Sheets of Black Rubber.—When the rubber adheres tenaciously to the cloth used in separating the sheets of black rubber, cut the whole into strips and throw into cold water. The cloth can then be readily peeled from the rubber.—T. F. CHAPLIN, *Dental Office and Laboratory*.

Opening a Flask for Inspection.—By placing a piece of rubber dam over the model the flask can be opened to ascertain whether it is necessary to add a little more, or to remove a portion. If the dam sticks to the packed rubber, touch with gasoline on a small, clean brush, when it will separate readily.—J. B. HODGKIN, *Dental Digest*.

Packing Pink Rubber.—To prevent red or black rubber cropping through the pink, cut all gates, or outlets for excess, at the back of the flask. Boil the flask well, at least ten minutes, and screw down the two front bolts first, not screwing down the back set until after the front parts of the flask have been brought together.—T. F. CHUPEIN, *Dental Office and Laboratory*.

Vulcanized Gutta-percha or Waxable Vulcanite.—This combination or ordinary rubber and gutta-percha when vulcanized looks like rubber, acts like rubber, but is less porous, lighter in weight, and cooler in the mouth. The method of manipulating is about the same as employed for bees-wax; soften the sheet and mold evenly over the model as you would wax.—A. S. PARKER, *Dental Summary*.

To Keep Flasks Clean.—Place a small quantity of sodium bicarbonate in the vulcanizer and your flasks will be readily and easily cleaned after using. The use of flask tongs aids in keeping the hands clean, and with them hot flasks are handled to better advantage.—H. E. DAVIS, *Dental Review*.

Liquid Silix.—Instead of paying a big price for a small bottle of "liquid silix" at the dental depot, get a quart of silicate of soda, which is the same thing, and can be had at any wholesale drug house for forty cents.—J. G. TEMPLETON, in *Dental Review*.

Rubber and Aluminum Plates.—Dissolve rubber in chloroform and add aluminum powder until the solution takes a creamy consistence. Give two or three coats to the model, after removal of the wax. Close the flask in the usual way.—*Archiv. fur Zahn*.

To Remove Plaster from the Inner Surface of Vulcanite Plates.—Immerse the plate for a short time in a strong solution of HCl. Then by using a cup-shaped brush-wheel, carrying pumice and oil, it is readily made clean and nice.—J. A. BULLARD, *Dental Review*.

To Remove Tin from Plates.—Small particles of tin adhering to vulcanite plates can easily be removed by mixing mercury with enough alloy to keep it from flowing, and rubbing it over the plate under fingers.—C. W. SIEFKIN, *Dental Brief*.

Shrinkage in Rubber.—The amount of shrinkage of rubber in vulcanizing depends upon its composition. Pure rubber and sulphur shrinks the most; red rubber less; pink rubber still less, in proportion to the amount of coloring matter.—GEO. B. SNOW.

Porous Plates.—In vulcanizing a case place the flask above the water-line, supporting it on an old flask or anything suitable. Use very little water, and you will not be troubled with porous plates.—A. C. PETERSON, *Dental Record*.

Cleaning the Festoons Between Plain Teeth.—In using plain teeth with pink vulcanite gum, cut discs from cork stoppers and use for cleaning up the festoons between the teeth.—FRANK H. SMITH.

To Prevent Teeth from Receding from the Rubber in Vulcanizing.—Let the temperature go up very slowly and vulcanize rather under than above the normal degree. Heat the flask in boiling water and the rubber over steam, taking care that it does not burn.—C. SOULARD, *Le Laboratoire*.

To Prevent Adhesion in Heating Rubber.—To prevent rubber from adhering to surface while heating for packing, cut a piece of muslin to fit the top of the lid, and glue it on. J. G. HALSEY, *Dental Brief*.

Clean Flasks.—Put a coil of sheet zinc into the water in the vulcanizer, and it will prevent the formation of the black oxids on the iron flasks, and they will soil the hands but very little.—*British Journal of Dental Science*.

To Clean Vulcanite Files.—Apply chloroform and clean with stiff brush. This will remove all the rubber packed in in trimming plates.—W. H. WHEAT, *Dental Hints*.

Porous Plates.—In vulcanizing a case place the flask above the water-line, supporting it on an old flask or anything suitable. Use very little water, and you will not be troubled with porous plates.—A. C. PETERSON, *Dental Brief*.

Vulcanizing.—In vulcanite work, for strength and to avoid secretions behind gum sections, vulcanize three hours, commencing at 280° F. and run up to 290° F. for the last half hour.—*Western Dental Journal*.

Vulcanite Plates.—There are two benefits to be derived from the adoption of a low heat and long time for vulcanizing, viz.: an improvement in the texture of the product and a diminution in its shrinkage.—GEO. B. SNOW.

Dark Joints.—Touch the dark places with a very little nitric acid. It dissolves off the stain. Wash off the acid, and you will be pleased with the result.—J. B. HODGKIN, *Dental Hints*.

To Remove Vulcanite from Between the Teeth.—Mount a stiff fine needle in a small handle or broach holder; sharpen on two sides and you have a useful little tool.—A. E. H. LEISTER, *Items of Interest*.

To Remove Adhering Plaster from Vulcanite Plates.—Place the plate for a short time in water containing a small quantity of sulphate of potassium.—DR. ISHAM, *Dental Forum*.

Dark Joints.—To prevent dark joints in vulcanite plates, pack the joints with gold or tin-foil, pressing it in with the edge of a penknife blade.—W. W. FRANCE, *Items of Interest*.

Vulcanizer Packing.—Heavy pasteboard makes an excellent vulcanizer packing, and when vulcanizers leak dusting on cornstarch will stop it.—*Dominion Dental Journal*.

Partial Plates for Lower Molars.—The portion of a partial lower plate passing around the anterior teeth is in the way and more or less of an impediment. A partial plate for each side, on the principle of a bridge, supported by telescoping crowns on the last two natural teeth, might be employed to advantage in some cases. The ridge-plate should be a saddle-plate, the alveolar ridge supporting and steadying it. Tube teeth stimulate the natural teeth in size and form, and are pleasant to the tongue. The teeth are attached to the posts by melted sulphur, which is not soluble in the fluids of the mouth.—S. H. GUILFORD, *Stomatologist*.

To Remove Plaster From Vulcanite Plates.—Immerse plate for a few minutes in hydrochloric acid.—DR. WRIGHT, *Pacific Gazette*.

Adaptation of Partial Denture to Remaining Teeth.—When only one or two teeth remain, as the two superior cuspids for instance, a closer adaptation to the teeth may be secured by slightly trimming the plaster teeth and completely encircling them with soft or velum rubber. Pack the ordinary rubber around this and vulcanize as usual. In finishing use a sharp knife, with both the knife and the velum rubber wet. A snug adaptation will be attained with support superior to clasps and less harmful to tooth structure.—P. B. McCULLOUGH, *International Dental Journal*.

Anchorage for Partial Dentures.—Burnish thin platinum around the tooth to be clasped, extending it slightly into the sulci. Fit the clasp over the platinum, wax the two together, remove and run solder between them and over the platinum extending between the cusps. The platinum can be perfectly adapted to the tooth, while clasp metal cannot, while possibility of bearing upon the soft tissues is prevented by the projection upon the occlusal surface.—G. W. PITTS, *The Bur*.

Anchor Plates.—To replace missing posterior teeth, upper or lower, make telescope crowns for the last tooth posteriorly on each side; cement the under ones to the natural teeth and attach the top crowns to a plate constructed in the ordinary way. The telescope crowns, fitting tightly, hold the plate rigidly in position while the plate derives its support from close contact with the mucous membrane.—P. T. DASHWOOD, *Dental Headlight*.

REPAIRING VULCANITE DENTURES

To Remove One or More Teeth from a Vulcanite Plate Without Distortion of the Denture.—Apply to the teeth to be removed a coating of sperm or other oil. Then hold the tooth to be removed directly over a small pointed flame; as soon as the tooth is thoroughly heated it may be removed without difficulty.—W. A. STEVENS, *Dental Review*.

Repair of Rubber Dentures.—The articulation being satisfactory, a new denture can be made almost as quickly as to repair the old one. Join the pieces accurately and place in lower half of flask, keeping flask even with rim of plate. Oil the surface, build some plaster around the outside of the denture, even with the occluding surface of the teeth. When hard, oil the surface, place the other half of flask in place and fill. When hard separate, leaving plaster rim around the outside of the teeth. Remove the teeth and place in upper half of flask; heat the old denture and remove the rubber, leaving impression of palatine portion perfect. Place the teeth in the impressions in the upper part and pack as in any other case.—C. C. NOBLE, *Dental Register*.

Attaching Teeth to Plate.—In a case in which teeth had been repeatedly broken from the plate, long-pin plate teeth were selected for the six anterior teeth. These were backed and edged as for a bridge and soldered together, a platinum wire being soldered back of the teeth for anchorage to rubber base.—C. A. BENT, *American Dental Journal*.

Rubber Plate Repair.—To adjust the edges of a broken vulcanite plate accurately is a trying feat sometimes; and the placing of wax on the plate hides the union more or less. Take a sheet of base-plate wax, hold it over a flame until well softened, fold it upon itself until it is about the size of the plate; take the plate in both hands and adjust edges and insert with pressure into the wax, teeth downward, and hold a few seconds for wax to cool; remove the hands and the plate will be in perfect relation, ready to run your model.—W. G. HOLLINGSWORTH.

Adding Teeth to a Plate in Repairing.—To add teeth to a vulcanite case, instead of putting wax on the cast where the repair or addition is needed, place rubber by means of a hot, clean spatula. This may be entirely buried in the plaster when flasking and immediately placed in the vulcanizer.—*Elliott's Quarterly.*

To Remove Teeth from Rubber Plate Without Danger of Cracking or Etching the Teeth.—Boil the plate in glycerin, in a porcelain pan, till it smokes, and the teeth will come away clean and free from discoloration. Put them back in the glycerin to anneal them, and when cool wash in warm water. They will be as bright as when new. The glycerin can be bottled for future use.—D. GENESE, *Ohio Dental Journal.*

Repairing Vulcanite.—If, after mending, the joints look dark, touch the stains with a very little nitric acid. It will not hurt the rubber and dissolve the stain. Use a darker rubber than the original, in repairs, as the used rubber will have become darker.—J. B. HODGKIN, *Dental Digest.*

Repairing a Vulcanite Plate.—A plate which has been broken in halves often gives us trouble to hold in correct position until we can get it poured. This may be made easy by simply pressing the two halves on a piece of wax, such as that which porcelain teeth are placed on, and adjust the fracture properly, then pour.—G. A. HITCH.

To Prevent Fracture of Rubber Plate.—When gum sections are used to prevent fracture at the median line, or opening of the joint after the wax has been mashed out, pass a loop of fine platinum wire around the pins on either side of the joint between the two central blocks; twist the ends of the wire together, flask, and vulcanize.—*Dental Hints.*

To Refit Dentures.—Place new-process oxyphosphate of copper, mixed to a stiff creamy state, upon the defective surface and press accurately to place. Allow the cement to set in contact with the tissues. Applicable to cases in which the tissues have become flabby and yielding as well as to those in which a leak at the periphery admits air under the plate.—R. C. BROPHY, *The Bur.*

Attaching Teeth to Plate.—Use long-pin plate teeth for six anterior teeth, back and edge as for bridge, articulate and solder together, then solder platinum wire back of teeth for an anchorage to rubber base, and proceed as usual with rubber plate.—C. A. BENT, *American Dental Journal.*

To Replace a Single Tooth in a Denture.—Cut away the part; roughen the surface and fill the space with vulcanizable gutta-percha. Warm the tooth and press into position and trim away the surplus with a warm spatula. Bury in the flask and vulcanize forty minutes at 320°.—W. A. BROWNLEE, *Dominion Dental Journal.*

Removing Teeth from Old Rubber Plate.—Boil the plate for a few moments. The rubber will be found yielding and may be sprung from the teeth with a pair of pliers, avoiding the unpleasant odors arising from holding over gas-jet.—*Dental Digest.*

To Prevent Fracture of Vulcanite Denture.—When gum sections are used, to prevent fracture between sections place a loop of platinum wire around the pins on each side of the joint; twist the ends together, flask and vulcanize.—*Western Dental Journal.*

To Insure Perfect Adaptation of Parts in Repairing Rubber Plates.—Warm a sheet of wax and lay on a flat surface. Press the teeth into the wax, teeth down, properly adjusted. Pour and proceed as usual. Soft plaster may be used instead of the wax.—DR. WRIGHT, *Ohio Den. Jour.*

Repairing a Vulcanite Plate.—Instead of dissolving rubber in chloroform, use the ordinary bicycle cement. It gives perfect union between old and new rubber and simplifies the work of repairing very much.—W. T. MARTIN, *Mississippi Dental Association*, 1900.

SEPARATING MEDIUMS

An Aqueous Solution of Shellac as a Separating Medium.—Shellac will dissolve in water to which borax, potassium carbonate, or any of the caustic alkalies are added. This is readily absorbed into the plaster and leaves absolutely no film. The solution can be poured immediately on the base half without waiting for the plaster to dry, thus saving considerable time.—DE COURCEY LINDSLEY, *Western Dental Journal*.

Separating Impression and Model.—Drop model and impression into hot water for a minute or two, after which they will separate without the least trouble, leaving the model much smoother than if whittled out. Another model, if desired, can be made in the same impression, as in nearly every instance the impression will come off in such large pieces that they can be placed back in the tray and fastened with a little wax.—J. A. ROBINSON, *Dental Weekly*.

A Separating Fluid.—Cover the impression with a solution of anilin in alcohol, and then with collodion. The anilin makes the ideal color-line, and collodion will not peel up from plaster previously treated with the anilin solution. The surface of the model will be perfectly smooth and the finest lines of the impression reproduced.—FRANK FOUNT, *Dental Century*.

Separating Medium.—Shellac dissolved in a saturated solution of borax in water makes a most excellent separating medium. Being an aqueous solution it is absorbed by the plaster of Paris and leaves not even a film of shellac on the surface. It separates with perfect ease and leaves a smooth surface.—W. M. BARTLETTE, *Western Dental Journal*.

A Good Separating Medium.—Pulverized soapstone sprinkled on the plaster of paris in the lower part of the flask, after it has hardened sufficiently to handle, makes a good separating medium.—*Dental Review*.

Separating Cast and Model.—If the impression material is modeling compound, use a small quantity of machine or other convenient oil on the surface of the impression; if it is plaster, mix a small quantity of common laundry bluing in the plaster for the cast, and the line of separation cannot be mistaken.—I. R. WARREN, *Dental Hints*.

To Separate Cast and Impression.—Drop the piece into hot water for a minute or two when they will separate without trouble, leaving the cast much smoother than if the impression was cut away. If desired, another cast can be made from the same impression.—*Dental Office and Laboratory*.

Separating Medium.—Strain a saturated solution of soap and water and add an equal part of lard oil; color if desired. This is simple and inexpensive and separates cleaner than anything else. In time the ingredients will separate and the bottle will have to be shaken.—E. E. WARREN, *Dental Digest*.

Separating Mould from Plaster Impression.—Soap the impression, then add a little bluing to the water used for mixing plaster to run the model. Before separating, place the model and impression in warm water, and in removing the impression the parts in contact will be quite distinct.—H. T. ARMSTRONG.

To Make a Smooth Cast.—Powdered tin mixed with collodion to the consistency of thick molasses, and applied to the surface of a dried cast before packing with rubber, makes the inner surface of a plate smooth and hard as if vulcanized on metal.—*Pacific Journal*.

A Varnish for Plaster Models.—Gum sandarac, 2 oz.; gum mastic, 1 oz.; Venice turpentine, $\frac{1}{2}$ oz.; alcohol, 5 oz.; dissolve. This varnish is colorless, elastic, and leaves a fine glossy surface. Color with anilin dye, if desired.—*Dental Era*.

A Dangerous Separating Medium.—Lycopodium, which is sometimes used as a separating medium in the making of sand impressions for the casting of metallic dies, explodes if any of the dust reaches a gas flame.—*Dental Cosmos*.

Separating Medium.—A good separating medium is made by dissolving paraffin in gasoline. Put in all that the gasoline will take up. Spread lightly over the impression with a camel's-hair brush.—*Hints*.

Separating Varnish.—Dissolve three ounces of borax in a quart of water; bring to the boiling point and add six ounces of powdered shellac.—A. DOUGHADAY, *Western Dental Journal*.

A Varnish for Models.—Models may be coated with a varnish made by dissolving white wax in spirits of turpentine.—W. H. ELLIS, *Dentists' Magazine*.

A Polisher for Rubber Work.—Procure a piece of fair leather, heavy and stiff, cut discs one inch in diameter and trim to a knife-edge, cut a hole in the center for lathe chuck. This is very efficient for polishing between teeth and places hard of access.—J. A. ROCKEY, D.D.S., in *Dental Brief*.

To Prevent Warpage of Plates.—When polishing a thin rubber or gutta-percha plate, fill it with plaster before putting it on the polishing lathe, first filling the under cuts with wax.—*Tri-State Dental Quarterly*.

For Polishing Plates.—Cones and wheels made of car-spring rubber are superior to felt wheels and cones. But a small amount of water is needed, as the rubber does not absorb the water like the felt cones, and this saves the hands and clothing from being soiled by the flying water and pumice.—H. T. CREWS, *Dental Headlight*.

Polishing Dentures.—Soap rubbed on a felt buff wheel will retain the wet pumice, causing it to cut much faster and considerably lessening the time and labor of polishing an artificial denture.—*Dental Register*.

Polishing Porcelain that has been Ground.—Make a very soft paste of a saturated solution of gum camphor and pumice; place in spirits of turpentine. Keep your polishing wheel wet with this while repolishing the ground surface.—W. H. SPAULDING, *Dental Summary*.

A Polishing Material.—To polish gold crowns, etc., I run my felt wheel over a cake of "lava soap." Very little pumice will be required, the base of this soap being probably pumice or volcanic dust.—J. K. WILLIS, *Kansas City Dental Journal*.

Polishing a Vulcanite Plate.—Use aqua ammonia to mix the whiting instead of water and the result will be more satisfactory. After polishing wash the plate in tepid water and finish with a clean buff wheel.—W. J. ROBINSON, *The Stomatologist*.

Finishing Up Vulcanite.—After sandpapering use emery and pumice, mixed half and half, followed by pumice alone, finishing with whiting.—DR. WESSELS, *Dental Office and Laboratory*.

To Give a Fine Finish to Gold.—After scratches have been removed with pumice nothing is so effective as oxid of zinc on a brush wheel. It leaves a beautiful lustrous polish.—H. H. JOHNSON.

DIES AND COUNTER DIES—SWAGING

A Metallic Shell-Die for Rubber Plates.—Take two impressions. Varnish the better one and set aside to dry. In the other pour a model, to which carefully adjust Stuck's tin, 32 to 34 gauge. Do this with the fingers, using spunk in foil carriers to bring to close adaptation. Cut and lap if inclined to pucker in places. When satisfactorily fitted, transfer the tin plate to the other impression, forcing it into every depression and undercut, using spunk, ball burnisher, etc., if necessary. Remove the impression and you have an ideal model. After waxing up the teeth, and when the case is ready for the flask, place another piece of tin over the whole, burnishing close to the teeth. Vulcanize between these two metallic surfaces and you will have a dense, tough, flexible plate with rugæ plainly defined and the results such as are not attainable by any other method.—W. K. SLATER, *Dental Headlight*.

Making Dies.—In cases where it is impossible to secure a plaster of paris impression a die can be obtained from modelling compound by using the following die metal: Bismuth, 48 per cent.; cadmium, 13 per cent.; lead, 19 per cent.; tin, 20 per cent. This can also be poured into wet plaster of paris with little or no risk.—O. H. SIMPSON, *Dentists' Magazine*.

Substitute for Counter Die.—With soft pine cut into little blocks and used endwise of the wood, laying the gold over the face of the die, one blow with a good heavy hammer will make what will serve as a counter die, and there is no fusible metal to adhere to the gold. The swaging process is shortened one-half by this process.—G. W. MELOTTE, *Dominion Den. Jour.*

Swaging with Moldine.—By using the moldine as a die the moldine seems to draw from every point, pressing the metal right into place when using it for swaging backings on teeth, swaging matrices for gold inlays and porcelain inlays from die.—J. K. DOUGLAS, *Dental Summary*.

The Ideal Die.—Take a plaster impression; if it breaks, unite the pieces with some easy-flowing cement. Boil the impression in beeswax ten or fifteen minutes to fill the pores of the plaster. Build a sheet of wax up around the tray to the height of the desired die, coat thoroughly with dry graphite, and electroplate with copper to the thickness of a writing-card. Set the impression on a dish of sand and pour molten zinc into the matrix thus formed.—GEO. A. COMPTE, *Dental Clippings*.

Sandvig's Swaging Apparatus.—The metal used for the die is very low fusing, and free from zinc; the die is made direct from the plaster impression, without even waiting for it to dry. The metal base-plate is swaged direct upon the die, using sand as a counter-die.—I. OTTESEN, *Dental Review*.

A New Metal for Dies for Swaging Plates.—Lumen metal works very much like Babbitt, but is very much harder. It makes a nice clean die, and apparently does not shrink or expand.—B. D. WIKOFF, *Dental Review*.

Counter-die Metal.—Add one part tin to five parts lead. Do not pour until it thickens, and then it will not adhere.—L. P. HASKELL, *Dental Digest*.

Babbitt Metal; Haskell's.—One part copper, two parts antimony, eight parts tin. Non-shrinking, hard enough not to batter, has a much lower fusing point than zinc.—L. P. HASKELL, *Dental Digest*.

Zinc Dies.—To save time in making small zinc dies for special purposes the model can be partly contoured with wax, covered with tinfoil, and the mold made immediately.—M. G. McELHINNEY, *Dental Digest*.

To Prevent Counter-dies from Sticking.—Coating the face of a Melotte metal die with vaselin will prevent it from fusing with the die.—*Indiana Dental Journal*.

SOLDERS AND SOLDERING

Cutting Up Solder.—Solder should be used in as large pieces as can be put on the work. One or two pieces the right size for a crown will give better results than twenty small ones. The reason for this is that oxid on a large piece is much less in proportion to bulk than the skin on a small piece and the weight of the large piece will break the skin easier. Again, less borax is necessary, and the least borax used the better, provided you use enough.—C. C. ALLEN, *Western Dental Journal*.

Soldering without Blowpipe.—Much of the soldering with 18- and 20-carat gold may be done without a blowpipe and with less risk of fracturing porcelains or melting off gold backings. Trim and shape a lump of charcoal so that it will fit into the burner without tilting, and with a depression in the top for the reception of the piece. Build charcoal log-cabinwise around the work and roof over with flat pieces to radiate the heat back on the work, with an opening at the front to give a view of the piece and opportunity to add solder if needed. Clip the solder into small bits, dip in cream of borax, handling with pliers, and apply sufficient to solder the case. Light the gas and let it heat up, having the burner so located as to avoid side draughts.—L. G. NOEL, *Dental Cosmos*.

Second Soldering.—When a second soldering becomes necessary place a piece of lower karat solder than was first used in mercury until the surface is slightly amalgamated. It will flow readily and, the mercury being sublimated in the heating, the appearance of the finished piece is the same as it originally was.—*American Dentist*.

To Confine Solder to One Spot.—Paint the parts to be protected with yellow ochre water color. Whiting will work the same way, but flakes off when heat is applied, which is not the case with the yellow ochre.—C. C. NOBLES, *Dental Register*.

Solder Teaser.—A common lead pencil is a fine tool for teasing solder to flow just where wanted. Expose the lead for about half an inch from the point and give the wood a longer slant than for ordinary use. Saturate the wood for about an inch up the slant with dilute sulphuric acid. Wrap with a strip of asbestos down to the lead exposure and bind with wire thread. This makes it more resistant to the heat of the blow-pipe.—W. H. SPAULDING, *Dental Summary*.

"The Teaser."—To one end of a four-inch piece of German silver wire solder a pointed piece of platinum wire about gauge 17 and two inches long. Put a handle on the other end and use the platinum point to move about pieces of solder, without fear of displacing the rest, coaxing it to points or surfaces to which it does not flow, spreading and drawing it as desired. The platinum does not effect the solder as steel would.—H. W. NORTHROP, *Ohio Dental Journal*.

Managing Solders.—Gold or silver solder has a disagreeable habit of flowing when it is not wanted and of not flowing when desired. It inclines to flow after the flux and also to the point where most heat is concentrated, and avoids places covered by such material as whiting, yellow ochre or graphite. About the most convenient method of preventing the flow of solder to any point is to rub that point over with a soft lead pencil point.—THOMAS J. McLEARN, *Stomatologist*.

A New Method of Soldering.—Mix equal parts of filings of an easy-flowing solder and of filings of some higher fusing metal with enough of a creamy solution of borax to make a thick paste. Pack the joint with this mixture and heat until fused, being careful that the entire mass is evenly heated throughout. This is especially adapted to cases where large spaces are to be bridged, or a cusp to be added, always making allowance for shrinkage.—F. W. STEPHAN, *Dental Summary*.

Investment Material.—Three parts plaster of Paris to one part powdered asbestos. If this investment is properly heated, you will have no fractured porcelains.—P. T. DASHWOOD.

A Cheap and Handy Asbestos Block.—Take about a yard of asbestos rope, to be obtained at any hardware store, and make a flat coil of from three to four inches in diameter. Cover with a mixture of plaster of Paris and pumice with some shreds of asbestos fibre. While still soft, insert as legs three flat-headed nails to form an equilateral triangle.—*Dominion Dental Journal*.

A Convenient Soldering Outfit.—Upon the swing-bracket of a druggist's filtering rack place a piece of wire gauze upon which the case to be soldered is placed and heated from below with a Bunsen burner. When the case is thoroughly hot a few blasts from one of the improved gas blow-pipes will flow the solder.—C. L. ALEXANDER, *Dental World*.

A Convenient Mode of Investment.—In backing teeth for the investment, soak asbestos paper until it becomes a pulpy mass. Press the porcelain facing into the mass until the edges are brought a trifle above the porcelain. The blow-pipe can be applied immediately without waiting for it to dry.—A. P. FELLOWS, *International Dental Journal*.

To Avoid Pit-holes in Soldering.—Be sure to keep your borax floating to the top of the melted metal; little pits are formed by particles of borax confined under pieces of solder. Use a small pointed instrument to stir up the solder and displace any borax that might otherwise be confined within the mass.—H. W. NORTHROP, *Items of Interest*.

Protection of the Eyes While Soldering.—When engaged in soldering, relief from the glare of the flame will be derived from the use of plain smoked glasses, which should be quite dark.—W. T. JACKMAN, *Ohio Dental Journal*.

Borax to Prevent Oxidation in Soldering.—Before cutting up gold solder, borax both sides and anneal in water. This will leave a coating of borax on both sides, and it will be impossible for it to oxidize. In bridge-work with porcelain teeth no borax will come in contact with the teeth.—E J. CONLEY.

To Prevent Bubbling in Soldering.—Cut the solder up and drop it in a solution of borax. Pick it out, and when dry there will be enough borax on it to make a flux, and no bubbling.—DR. SANGSTER, *Dominion Dental Journal*.

To Prevent Broken Porcelain.—Fracture of porcelains is often due to borax getting through the pin-holes in the backing. To prevent this, remove the backing and adapt a piece of No. 20 or 30 gold-foil over the back of the facing, by means of a cork. Put the backing on, press down, and trim off excess of foil. The borax cannot get in between the gold-foil and the porcelain.—S. H. GUILFORD, *International Dental Journal*.

Solder for Aluminum Plate.—A French patent has issued for an aluminum solder, which consists of aluminum 95 parts, copper 2 parts, antimony, bismuth and zinc each 1 part. The aluminum must be protected by a flux, viz., a thin layer of phosphoric acid.—*Ohio Dental Journal, Translation by H. Prinz*.

Easy Soldering.—Attach compressed-air hose to your blow-pipe and the absolute ease with which the soldering can be done is surprising, while no checking of porcelain is apt to occur when the heat is thus steadily applied — GEORGE ZEDERBAUM, *Dental Digest*.

Borax Flux.—Fill a bottle with water; drop into it a lump of borax and boil. With this moisten the place where the solder is wanted to flow, and it will run like a flash; much easier than when borax powder is used.—J. B. ASCHER, *Dental Cosmos*.

To Prevent Change of Color of Porcelain After Soldering.—Paint between backing and tooth with whiting dissolved in alcohol. Make backing of platina and flow 18k. gold over it. Invest in chalk and plaster half-and-half.—DR. LOMBORG, *Pacific Stom. Gazette*.

Annealing.—Gold or copper plate heated to redness and then dropped into alcohol will be softer and cleaner than when water is used.—*Dental World*.

To Prevent Bubbling of Borax.—Mix a minimum of gum-arabic and water with the borax on a glass slab.—*International Dental Journal*.

Quick Investment.—For quick investment for soldering bands, clasps and teeth, the following mixture may be kept on hand: Equal parts of prepared chalk and fine sand, kneaded in glycerin, making a plastic mass.—*Dental Hints*.

Fluid Flux.—Powdered borax, 7 drachms; boracic acid, 7 drachms; distilled cold water, 6 ounces. Shake well until dissolved; then filter, pouring back the liquid until perfectly clear.—*Pointers*.

To Prevent Checkered Porcelains.—Always wrap an investment, immediately after soldering, in asbestos cloth, and the teeth will never be cracked by chilling.—B. H. TEAGUE, *Dental Hints*.

Quick Pickle.—Place the piece in a small glass dish and nearly cover with hot water; pour in an equal quantity of pure sulphuric acid, and by that time the piece will be clean.—OLIVER MARTIN, *Dental Review*.

Jumping Solder.—In placing foil scraps in a crack where you wish to span solder use scrap mat gold. It will stay where put and not ball, but make a satisfactory joint.—PRESCOTT NILES, *Ohio Dental Journal*.

Flux for Hard Solder.—In place of borax, use the fluid that comes with your phosphate of zinc.—*Dental Hints*.

Resoldering.—To prevent the unsoldering or re-fusing of parts previously united, coat such surfaces with erocus (ferric peroxid) or a solution of plumbago or whiting in alcohol or water.—H. J. GOSLEE, *Items of Interest*.

MANIPULATION OF PLASTER OF PARIS

A Coating for Plaster Casts.—Mix in four ounces of sulphuric ether two ounces of collodion and two ounces of "silver gloss" (obtained from dealers in painters' supplies). Let it stand for about forty-eight hours and shake well before using. Keep in well-corked bottle. Apply with camel's hair brush. Gives a beautiful glossy surface to casts.—J. F. STEELE, *American Journal*.

Manipulation of Plaster of Paris.—Use no water, but a preparation made from the gluten of rice. It is almost a syrup, but entirely free from any adhesiveness, yet it has a great affinity for the plaster and will take up a very large quantity; enough is added so that it can be rolled in the hands like a piece of putty. There is no need for haste. When set it has a beautiful smooth surface, and no air bubbles remain in it. If ordinary plaster is dropped in water and allowed to settle thoroughly and the excess of water poured off, and then a teaspoonful of this gluten added, it will make the mixture smooth, and it will pour without any air bubbles.—D. GENESE, *International Dental Journal*.

To Harden Plaster Casts.—Dissolve one part alum (free from iron) in five and a half parts hot water. Immerse the cast and allow to remain from half an hour to several weeks, according to size and bulk. After it has absorbed a sufficient quantity of the solution, remove and from time to time drench with the same solution until a coating of crystallized alum is formed over the entire surface. When thoroughly dry polish with sand-paper and finish by rubbing with a dry cloth. The product will be a hard, dense mass of fine texture, extremely white, showing a high polish resembling Carrara marble.—*Ex.*

To Harden Plaster of Paris Casts.—Dissolve boric acid in warm water and add sufficient ammonia to form the borate which remains in the solution. Mix the plaster of paris with this solution, cold, or apply it to the surface of the casts with a brush. Rinse off and dry. The surface will become hard in two days, the induration in the interior proceeding more slowly.—*Medical News (Brief)*.

Plaster of Paris.—Vinegar of borax will delay the setting of plaster of Paris. Sugar, salt, or potassium sulphate will hasten its setting. Marshmallow hardens and toughens it. Marble-dust mixed with it prevents its expansion and makes it stronger and better able to withstand heavy pressure.—D. BEACOCK, *Dental Office and Laboratory*.

Impression Plaster.—French's plaster being very fine sets quicker and gives a smoother surface to the cast than the coarser plaster. In orthodontic cases the impressions in almost all cases have to be broken for removal, and the fine plaster does not set so hard but that it can be removed without causing much pain. If reasonable care and skill are used the pieces can be put together accurately enough. The impression should be well dried before varnishing.—DR. ABELL, *Dental Register*.

Plaster of Paris: Prevention of Expansion.—The addition of sulphate of potassium to the water used in mixing, in the proportion of five grammes to forty cubic centimetres of water for from fifty-five to sixty grammes plaster of paris, will accelerate setting and partially control expansion. Dissolve the potassium sulphate in the water before adding the plaster. Stir as little as possible.—J. H. PROTHERO.

Mixing Plaster.—With the patient's mouth in readiness and the tray in convenient position for filling, proceed to mix, using distilled water about 70°. Sift the plaster slowly into the water with little or no stirring; when the last particle has disappeared below the surface of the water pour off the surplus and the plaster is ready for the impression.—ALFRED P. ROGERS, *Items of Interest*.

To Give a Smooth Glossy Surface to Plaster Models.—

Coat the impression with very thin shellac varnish, just enough to color the plaster. Then coat with a varnish made by dissolving gum sandarac three parts and gum elemi one part in pure alcohol, thin enough not to form bubbles when applied with soft brush.—A. J. HAND, *Items of Interest*.

Hardening Plaster Models.—

Plaster models may be hardened and given a marble-like surface by boiling them in stearin, using a double boiler like a glue-pot for melting the stearin. The models must be perfectly dry before putting them into the boiling stearin.—*Dental Register*.

Test for Quality of Plaster of Paris.—

The quality of plaster may be tested by simply squeezing it in the hand. If it coheres slightly and remains in position after the hand has been gently opened, it is good; if it falls to pieces immediately it has been injured.—*British Journal of Dental Science*.

To Prevent Adhesion Between Two Plaster Surfaces.—

Melt a small piece of old wax in olive oil, to form a thin paste, with which smear the impression. The amount of wax required differs summer and winter.—R. STANWAY PARRIS, *Journal British Dental Association*.

To Harden and Protect Plaster Casts.—

Immerse the casts in a pot of boiling beeswax until thoroughly saturated. The wax penetrates throughout the plaster, making it hard or horny and impervious to moisture.—*International Dental Journal*.

To Prevent Air Bubbles in Plaster.—

Soaking the lower part of a flask in water for a few minutes before you fill in the upper half will entirely prevent air bubbles in the plaster.—W. A. BROWNLEE, *Dominion Dental Journal*.

To Toughen Plaster Models.—

Immerse for half an hour in an alum solution—one part iron-free alum and six parts water.—*International Dental Journal*.

The Plaster Bench.—A piece of plate glass about a foot wide and two feet long, set in the plaster bench near the waste drawer, presents a smooth surface on which to set models, and which is easily cleaned.—A. W. THORNTON, *Dental Brief*.

Plaster of Paris: Warpage.—Prompt removal from tray and separation of cast from impression will obviate warpage to a considerable extent.—J. H. PROTHERO, *Dental Digest*.

To Prevent Expansion of Plaster in Setting.—If slacked lime is added to boiling water and the clear liquid decanted for use in mixing plaster of Paris, the plaster will not expand.—P. B. McCULLOUGH, *International Dental Journal*.

PROSTHETIC DENTISTRY—MISCELLANEOUS

Combination Lower Plates.—In a partial lower vulcanite denture the inconvenience arising from the bulk of rubber necessary to give strength to the portion passing back of the anterior teeth can be overcome by substituting for the rubber a platino-iridium wire to hold the two lateral portions of the plate in position. Flatten and notch or roughen about one-half inch of the ends of the wire, fitting it to the plaster model one-half or three-fourths of an inch back of the last anterior tooth on each side, bending the end in around the tooth. Wax up as you would an all-vulcanite plate, leaving out the wax behind the anterior teeth, but investing the ends of wire well in the wax. Let the wire clear the gum back of the anterior teeth, as pressure would result in irritation.—RAYMOND C. MATHIS, *Dental Cosmos*.

Cavity-cutter for Artificial Teeth.—Dissolve gum camphor in turpentine, making a saturated solution. Shape cavity with carborundum wheel, then use engine and an old discarded engine-bur kept moistened with solution.—J. A. ROCKEY.

To Prevent Shrinkage of the Gums and to Preserve the Festoons While a Denture is Being Made.—The sockets must be kept open, for which purpose a model, including the roots, is made as follows: Take an impression in plaster before the teeth are removed. Then extract the teeth, smooth the roots and insert them in the impression, which is then poured. Remove the natural teeth from the cast and make a plate of vulcanite, which will carry points corresponding to the roots of the teeth, and which will fill the sockets. This can be worn without irritation, and there will be no hemorrhage. Facings having long necks are to be used for the denture, entering the sockets as high up as possible, say three-eighths of an inch.—S. J. HAGMAN, *Journal of the British Dental Association*.

Handy Instrument for Burnishing Backing to Pins.—Draw the temper from an old excavator and cut off sufficient to leave of a size to be drilled from the end, deep enough to more than receive facing pin; countersink the hole. With sharp-pointed instrument punch holes through backing and place backing over pins with flared out edges away from facing. Place the above burnishing instrument over the pin and press the backing hard against the facing and with a few turns of the instrument burnish the flared edges close to the pin, making a perfect joint. This avoids bending the pins, with the strain on the porcelain.—C. E. BELLCHAMBER, *Dental Review*.

Forming "A Relief."—Outline on the cast with pencil the location of the hard places and cover with tin foil No. 60, from three to five thicknesses. Cut the first piece by the outline on the cast. Cut another by this and trim it slightly all around the edges. Use the second as a pattern for the third, which in turn trim as before, and so with the others. Apply the smallest to the cast first followed by the others, necessarily thus concealing the steps at the margins and avoiding the sharp edges so objectionable in the old air-chambers. Secure the foil to the cast with liquid silex or varnish.—W. E. WALKER.

To Drill Cavities in Porcelain Teeth.—With carborundum wheel grind down a pit of suitable size. Make a paste of glycerin, turpentine and corundum powder and rub it into the pit, and with copper mandrel drill two retaining points. In this way a cavity can be prepared in a porcelain tooth in five minutes.—J. F. STEELE, *Dental Brief*.

Preparing and Filling Cavities in Porcelain Teeth.—It takes but a few minutes to prepare a cavity. Much better results can be obtained by the use of a thin diamond disk than with the diamond point drill. By using the disk, cavities may be made in almost any part of the tooth in which the natural ones usually decay. First cut away with a corundum or carborundum stone the surface of the tooth where the filling is to be placed, and then with the diamond disk the sides of the cavity can be easily undercut sufficiently to hold the filling. Moss fibre or some form of sponge gold is much easier started than foil, and can be worked with very little malleting. It only requires about half the quantity of gold necessary to fill the ones prepared with the drill. Ap-proximal cavities can easily be imitated by this method, which would be impossible in the old way; corners can be built out and a filling can be inserted in almost any position desired. With a little experimenting one will be surprised at the artistic results which may be obtained, and I am sure your patients will fully appreciate your efforts in this direction.—D. LINLEY PALMER, *Dental Brief*.

Continuous Gum Facing Compound.—To give as nearly as possible the appearance of gum tissue when using plain teeth for vulcanite dentures, the "Continuous Gum Facing" closely resembles porcelain continuous gum, is inexpensive, easily applied, and when thoroughly hardened retains well its color and form. It should have from six to twelve hours in which to harden, placing it in the sun or other warm place to hasten the process. By using aluminum as lining and continuous gum compound as a facing makes a plate that is healthy, cleanly and handsome at little expense.—J. J. GROUT, *Dental Digest*.

Denture Retention: Model Modification.—Denture retention depends upon *adaptation* rather than *fit*. The plate must lie close to the hard parts of the mouth but rest definitely on the softer and yielding portions; each case has a peculiarity unto itself and no definite rule can be formulated. It is an excellent practice to place powdered rouge on the parts when the tissues are soft and yielding; when followed up with the plaster these parts are found marked; coating them with more rouge the model will be likewise marked and should be scraped to the depth indicated by the tissues; if pronouncedly soft, remove considerable; if less so, remove accordingly.—B. J. CIGRAND, *American Dental Journal*.

Aluminum in Presthetic Dentistry.—The special merits of aluminum—*pure* aluminum, be it understood—are its extraordinary lightness, its power of resistance to the oral fluids, its indifference to the action of the mucous membrane, its remarkable susceptibility of polish, easy method of working, resistance against oxidation, its superior capability of adhesion. Only the careful practitioner, however, can treat aluminum with success. Care must be taken in selecting the pure and not too soft metal, carefully removing any impurities after rolling or stamping, heating it cautiously and cooling it slowly, and having it not too thin, or it will easily bend; never below 0.7 millimetre for full and at least one millimetre thick for partial plates.—W. PFAFF, *Dental Cosmos*.

To Keep Lathe Stone Wet and Clean While Grinding.—Select a small egg-shaped sponge, commonly called "school sponges;" through the center of this pass an old excavator, having previously filed it to a sharp point at one end. Now tack a thin piece of soft pine, about four inches square, to the lathe table a little back of the stone. Wet the sponge and wring out just enough to prevent dripping; stick in the excavator and allow the sponge to recline against the wheel.—R. B. COLVIN, *Dental Brief*.

A Temporary Partial Plate Made in a Few Minutes.—

Mold a large piece of temporary stopping to the vacant space. Suitable teeth are heated and pressed into place in the mouth. With powdered gum tragacanth sprinkled on the under surface of the piece it can be worn with perfect comfort and security until the plate is repaired.—JOHN GIRDWOOD, *Dental Cosmos*.

Dentures for Edentulous Mouths.—To counteract the natural tendency of the lower jaw to elongate with age, in setting the teeth let the overlap of the incisors be somewhat pronounced, and let the back upper teeth be slightly longer and the back lower teeth a trifle shorter than the natural teeth would be, dropping the line of occlusion to the rear, the force of bringing the teeth together giving a tendency to tighten the upper plate upon the gum.—R. R. FREEMAN, *Dental Headlight*.

Bicuspid Teeth in Metal Plate-work; The Logan Crown.

—The bicuspid teeth as furnished are not all that they ought to be, and in order to get a grinding surface that is adequate use the Logan crown in metal work. Having selected a suitable crown, cut off the pin and fill the depression flush with gold-foil, and bevel off at the palatal surface, leaving a V-shaped space into which solder will run. The Logan crown gives the desired articulating surface, a better æsthetic effect, and a natural feeling to the tongue.—W. D. TRACY, *Dental Cosmos*.

Artistic Prosthetic Dentures.—A simple method by which the individual characteristics of the patient may be preserved in the alignment of the teeth is, before extracting the remaining teeth, to have the patient close the teeth into a piece of softened wax. When the teeth are extracted, wash them and place them in the impression in the wax and run plaster around the roots to hold them in place. This will prove a valuable aid in setting up the artificial teeth, in preserving the characteristics of the natural teeth.—L. W. SKIDMORE, *Dental Digest*.

Cutting Cavities in Porcelain Teeth.—Undercuts in cavities in porcelain teeth are readily made with a fine or small copper wire carried in the engine, the point being wet with oil and emery.—HOWARD E. ROBERTS.

Malocclusion.—There is no department of dentistry that demands more knowledge and skill than does the moving of maloccluded teeth into the proper position. It is also a difficult task to keep them there except in those cases when the occlusion insures retention. Use only one retaining appliance, the complete splint, similar to that used for a fractured jaw. "The retainer that doesn't wiggle is the one that holds the teeth."—J. D. PATTERSON, *Western Dental Journal*.

Hygienic Lower Dentures.—Watts' and Weston's metals are alloys largely composed of tin and silver, to which a small amount of bismuth is added to reduce the melting point. The saline fluids in the mouth when acting on the plates may form chlorid of tin, as tin is easily attacked by chlorin. This chlorid of tin is a strong antiseptic agent, which will exert its good influence upon the mucous lining of the oral cavity; no toxic salts being formed for this reason.—H. PRINTZ, *Dental Digest*.

Temporary Dentures.—We cannot place in the mouth a temporary denture quickly enough after the removal of the teeth. I am so radical in my belief that I advocate making a denture before the extraction of the teeth in a great many cases, so that after the extraction has taken place I can at once put the denture into position, thus not only restoring the lost teeth, but the denture acts as a splint to encourage the rapid healing of the wounded parts.—W. M. BARTLETT, *Western Dental Journal*.

Clasps and Bands.—When a gold band encircles a tooth saturated with acid and pathological saliva, an electrolytic action is established which destroys the enamel and dentin of the tooth, varying with the state of calcification. By

the substitution of iridoplatinum these evil consequences are averted. The swaging of iridoplatinum being difficult, the alloy is annealed in a sheet-iron box filled with charcoal heated by an electric current. Pure gold must be used for soldering.—DR. POINSOT, *Dental Cosmos*.

"Shoeing" or Tipping Porcelain Teeth.—Grind the tooth to thin or "feather edge" as usual; extend backing as far as possible, filling off gently toward the tooth. Place on model and wax up, extending the wax a few lines beyond occlusal end of tooth. After investment has hardened remove wax and pack the groove left by removal of wax on end of tooth with non-cohesive gold foil. When soldered the tip will be perfect, the foil serving as scaffolding to carry the solder.—E. P. BEADLES, *Danville, Va.*

Quick Flasking.—Mix sufficient plaster to fill the flask. Fill one half and put in the plaster cast or plate, shaping the surrounding soft plaster so as to have no undercuts. Cover the filled half with tissue or bibulous paper, brush it over with soap solution, put on the ring of the other half and fill up with the remaining plaster while still soft, and put on the top of the flask. Will open as readily as if two mixes of plaster had been made.—B. H. TEAGUE, *American Dental Weekly*.

Bicuspid and Molar Porcelains in Close Bites.—Use diatoric teeth. They are the strongest teeth that are made. Solder a dwarf pin to the plate to pass up centre of tooth, packing in a little vulcanite, which makes a very strong bite, absolutely firm. They will stand very great pressure.—J. H. COSTER, *Journal of the British Dental Association*.

Perfect-fitting Backings.—Grind the facings (for front tooth) to feather edge, using fine stone. Adapt pure gold, No. 32, to back; punch holes for pins and put back on tooth. Roll up several thicknesses of rubber-dam and swage the tooth and backing between the heavy folds of dam, using horn mallet.—*American Dentist*.

Modeling a Plate.—Make the wax model represent as accurately as possible the finished plate. Make the surface of the wax smooth with blowpipe flame, and when cold polish with light and rapid strokes with the dry finger. Then varnish the wax with thin shellac. This will give the plate such a smooth surface that no scraping will be necessary, only scouring with felt wheels and pumice, and polishing.—W. BUZZELL, *Ohio Den. Jour.*

Adaptation of Partial Denture.—When only one or two teeth remain, as the two upper canines for instance, a closer adaptation may be secured by slightly trimming the plaster teeth and completely encircling them with soft or velum rubber. Pack the ordinary rubber around this and vulcanize as usual. This will give a support superior to that given by clasps and less harmful to tooth structure.—P. B. McCULLOUGH, *International Dental Journal.*

To Mark Exactly on a Denture the Spot Corresponding to a Wound of the Mucous Membrane.—Cut a disc of suitable size from paper gummed on one side, and place it carefully over the ulcerated spot, gummed side up. Moisten the denture and place in position with light pressure. Remove carefully and the disc will be found adherent upon the point wounding the membrane, which can then be relieved.—*Revue de Stomatologie.*

To Renovate Hardened Mouldine.—Place in a glass and cover with water to which a half-teaspoonful of glycerin has been added. Leave in a warm place until the water evaporates. The water dissolves the lumps and the glycerin thoroughly permeates the mass; a little kneading will make it as good as new.—P. W. SMITH, *Dental Digest.*

Retention of Full Upper Dentures.—The most essential points governing the comfortable retention and subsequent satisfactory use of a full upper denture are, (1) faultless adaptation of the denture to the mouth and gum; this alone will cause considerable capillary attraction or adhesion; (2) a perfect articulation; (3) a properly constructed relief chamber.—H. M. KIRK, *Items of Interest.*

To Precipitate Gold from a Solution Containing other Metals.—Make the solution thoroughly acid by either nitric or hydrochloric acid. Then add from ten to one hundred cubic centimetres commercial formalin, according to quantity; the action is hastened by gentle heat; pure gold in crystalline condition is completely precipitated and separated from a solution also containing mercury, zinc, lead, tin, etc.—F. J. McINNES, *British Dental Journal*.

Insert Dentures Immediately After the Extraction of the Teeth.—Frequent use exerts an influence in maintaining the shape of the jaw, the presence of dentures preventing the degeneration of the facial and masticating muscles, the jaws consequently retaining longer the form characteristic of adult life.—W. H. DOLOMARE, *Journal British Dental Association*.

Retention of Dentures.—If possible a mouth should not be rendered edentulous, but in each jaw two roots should be left and utilized to support the plate. A satisfactory method is to fit each root so left with a gold cap and tube, into which fit a pin attached to the plate. The stability which even one root so treated will give to an entire denture is surprising.—WM. M. GABRIEL, *Dental Record*.

Banding a Tooth.—In banding with gold a tooth having an amalgam filling, burnish over the portion of the gold coming in contact with the amalgam a piece of platinum foil and solder before bending the gold, thus obviating the danger of weakening the band by permeation of the gold with mercury from the amalgam.—A. DRAKE, *Dental Record*.

A Cushion Lower Plate.—In a case in which the mouth was exceedingly tender, so that the patient was quite discouraged about the possibility of wearing a lower plate, a plate was made with the whole lower surface of palate rubber, about one-sixteenth of an inch in thickness. This was worn with much comfort.—C. C. BACHMAN, *Dental Cosmos*.

Exactness in Prosthetic Methods.—A greater degree of exactness in our methods and of accuracy in our results in prosthetic dentistry are calculated to produce a more favorable opinion among our patients than would the same increased vigilance when applied to what might strictly be termed operative dentistry. A far greater proportion of patients can judge of the accuracy of fit of a denture than of the perfection of a gold filling.—H. C. WETMORE, *Dominion Dental Journal*.

Adapting Metal Backing to Facings.—Provide a semi-hard rubber block with holes for the reception of tooth-print. Apply backing to facing approximately; place on the rubber block with the pins inserted in the holes. Place another block of rubber on the porcelain and strike with mallet until adaptation is obtained.—A. H. PECK, *Dental Review*.

Shaping the Anterior Teeth.—A practice which is of considerable importance, but too frequently overlooked, is that of modifying the forms of the anterior teeth for esthetic and prophylactic reasons. Quite often a few touches of the carborundum wheel will wholly change the appearance of the anterior teeth and greatly augment their powers of resistance.—J. H. MORRISON, *Dental Digest*.

Articulation.—The four positions of the lower jaw in its relation to the upper, from a strictly dental standpoint, are occlusion (being the relation desired in taking the bites), right lateral occlusion, left lateral occlusion, and incisal occlusion. The combination of these four positions, in action, constitutes articulation.—P. B. McCULLOUGH, *International Dental Journal*.

Artificial Dentures: Failure or Success, Which?—A few days' treatment of unhealthy gums, a few days going without an ill-fitting old plate, a minor surgical operation to remove a flab of tissue before taking the impression, will often give success where otherwise you are destined to meet with failure.—FRANK FOUNT, *Dental Century*.

The Celluloid Plate.—A celluloid plate, made on a metal cast, fits more perfectly than a rubber plate made on plaster. Take impressions in plaster and sand, in an asbestos impression-tray, and get a metal cast direct from the impression. Celluloid plates are non-breakable, contain no mercury, are more nearly like natural gum, and when made on a metal die of ordinary tinnern's solder, they come out smooth and polished and slip off the cast with very little trouble.—T. H. MORGAN, *Items of Interest*.

Platinum-gold.—In the use of platinum-gold for building down teeth great care must be exercised in annealing, unless it is done with the electric annealer. The most perfect results can be obtained by using it within a short time after annealing.—*Dental Review*.

Cleansing Wax from the Pins of Teeth.—Alcohol, used with a little cotton on an excavator, after the use of hot water, will cleanse the pins better than water alone. It will separate from the pins unnoticed particles of wax, detaching it from the pins but not dissolving the wax.—J. B. HODGKIN, *Dental Digest*.

An Improved Bunsen Burner.—Drill a small hole in the side and insert a small brass tube, allowing it to come just flush with the top, leaving the other end long enough to attach to your bellows. When you need more heat than the burner makes, apply the blast.—G. B. SPEER, *Dental Summary*.

"Waxing-up" Made Easy.—Grease a tin box and put your scraps of base plate wax in it. Melt them up and while hot paint on the wax with an artist's paint brush one-fourth of an inch wide. Keep the wax hot.—E. C. FRENCH, *American Journal of Dental Science*.

A Suggestion in Prosthesis.—For a full lower plate, when the ridge is narrow and thin, use small bicuspid and molars, very narrow on the grinding surface, thus lessening the resistance in mastication, with less injury to the gums than with larger teeth.—J. J. REED, *Dental Review*.

An Artistic Artificial Denture.—An artistic artificial denture is one where the laws of nature have been complied with in harmonizing the size, in form, in shade, and in alignment, with the physical characteristics of the patient, so that the patient on opening or closing the mouth will show no suspicion of inharmony. Otherwise it is simply "making a plate."—C. O. METZLER, *Dental Summary*.

Artificial Dentures: To Prevent Tipping.—A knowledge of the laws relating to levers, as applied in the construction of artificial dentures, is most useful, and if it is borne in mind that it is best to keep the load between the power and the fulcrum, much will be done in the way of preventing tipping of the plate.—D. P. SIMS, *Dental Digest*.

Vulcanizer Packing.—Have a ring cut of tin the size of top rim of the boiler. With this as a pattern cut rings of thick wrapping paper. One of these, soaked in water, placed over the old rubber packing, and brushed over with stove-polish, makes a perfect joint.—A. T. PEETE, *Am. Den. Weekly*.

To Remove Model from Articulator.—Grip the articulator in a bench vise and cut through the plaster with a small hand saw. Especially suitable for lower models which are so easily broken. If sawn off at the right depth no paring is necessary before flasking.—W. A. BROWNLEE, *Dominion Dental Journal*.

Immediate Insertion of Temporary Dentures.—In order that the anterior teeth may enter the sockets of the extracted teeth, insert rolls of soft wax into the sockets, to come away with the impression. This will permit the teeth to go to place without impinging upon either the gum or the alveolus.—DR. DRISCOLL, *Items of Interest*.

Celluloid Cement.—For making celluloid cement for mending casts, dissolve the celluloid in acetone; this is better than ether and alcohol. The solution may also be used in place of collodion on wounds, to protect from the air like court plaster.—I. DOUGLAS, *Dental Register*.

Shellac Varnish.—To produce a clear solution, take a two-ounce bottle half full of powdered shellac, fill with alcohol and shake well. Let it stand until thoroughly clear on top; then pour off into small bottle for immediate use. Fill the larger bottle again with alcohol and put aside for future use.—G. S. HERSHEY, *Dental Review*.

Artistic Treatment of the Teeth.—Pointed cuspids and irregular lengths of laterals and centrals, when ground off to approximate symmetry, improve the appearance and increase the usefulness of the teeth, also facilitating cleaning the teeth on the part of the patient.—A. C. HART, *Items of Interest*.

Sticky Wax.—For fastening teeth securely to the base plate, preparatory to trying in the mouth, a wax made with seven parts of white wax and three parts of gum dammar, melted together, and one part of resin added, will be found far superior to the ordinary yellow wax.—JAS. K. BURGESS, *Dental Cosmos*.

Long or Short Cusps.—When there is scarcely any ridge at all, and the lower plate is liable to be thinner, or the upper to lose its suction, use short cusps or grind them off almost entirely. Long cusps interlock, and it requires the bearer to bite exactly right, or dislodge the plate.—J. J. REED, *Dental Review*.

Rocking Plates.—To prevent plate from rocking from expansion of plaster, as soon as cast is poured sprinkle a little dry plaster on top and lay over it a little piece of non-plastic; place in flask, turn down snug, leave it three hours. The cast will never bulge up in the centre.—I. F. STEELE, *Dental Brief*.

To Renovate Dirty Wax.—Melt in water; when cool scrape dirt from underside, melt again in clean water, adding a teaspoonful of sulphuric acid when it comes to a boil.—DR. WRIGHT, *Ohio Den. Jour.*

Artificial Dentures.—All who wear artificial dentures will find great comfort in using glycothymolin in cleaning the plates and for rinsing the mouth. It is very soothing to the mucous membrane, particularly the red spongy condition often met with under plates of rubber.—W. H. CRAFT.

Blow-pipe for Waxing Cases.—A convenient and effective blow-pipe for waxing cases is made by using the nozzle of a chip blower and the mouth-piece of a tobacco pipe, connecting the two with a piece of rubber tubing ten inches long.—I. A. ROBINSON, *Dental Weekly*.

Broken Column of Mercury in Vulcanized Thermometer.—Heat the thermometer until the mercury in the bulb expands and joins the mercury above. Cool off suddenly and it will all go down together. It will then register correctly again when the temperature is increased.—J. M. WALKER.

Faulty Dentures.—To clearly locate on the plate the irritated spot, place a little moistened whiting on the curve of a spatula and apply it to the spot in the mouth. Put the plate in place, and on removing it the place demanding relief is clearly indicated.—L. P. HASKELL, *Dental Review*.

Flat Ridgeless Jaws.—With flat ridgeless jaws better success can be attained with swaged metal plates than with rubber, and that, too, without the vacuum cavity.—L. P. HASKELL, *Items of Interest*.

Prosthetic Dentistry.—A good prosthetic dentist must be not only a mechanic, he must be an artist of the highest excellence, and also a thorough anatomist.—DR. LOWRY, *Dental Review*.

An Aid to Laboratory Neatness.—Do all wax work on a piece of plate-glass 10 x 17 inches, which helps to keep the surroundings clean. To clean the glass simply heat it or scrape it.—H. E. DAVIS, *Dental Era*.

Lower Dentures.—Do not extract the last remaining lower tooth in any mouth if it has any kind of a healthy attachment to the jaw. Clasp it properly and you will get the blessing of a grateful patient. Extract it and the chances are you will have to make excuses about full lower plates the balance of your days.—W. H. TAGGART, *Dental Review*.

Compressed Air in the Laboratory.—In the laboratory compressed air is a desirable substitute for the bellows when using the blow-pipe. The flow is so steady that it is safe and effective for soldering crowns and bridge-work containing porcelain.—B. E. SANDERS, *Dental Summary*.

"Mouldine."—Send to a near-by pottery or to the studio of an artist friend and get some wet clay. Add a quantity of glycerin; keep in a tightly closed can and you will have "mouldine" always ready for use.—*Dental Office and Laboratory*.

To Prevent Adhesion of Plaster to Vulcanite.—Before packing, varnish the model with collodion, and the plaster will not adhere to the plate as when sandarach is used, and the plate will have a smoother and more polished surface.—D. H. PAYNE, *Items of Interest*.

To Change the Shade of a Porcelain Tooth.—The shade of a porcelain tooth can be changed to a darker tint by carefully heating over an alcohol flame for a few minutes.—C. B. COLEMAN, *Items of Interest*.

To Improve Appearance of Artificial Teeth.—To remove the unnatural high glossiness of porcelain teeth, dip into hydro-fluoric acid prior to setting, making the surface appear more life-like.—*British Jour. Den. Science*.

To Clean Plaster Bowls.—When plaster has been left in the bowl until it has become hard, pour boiling water in the bowl and let it stand about two minutes. The plaster can then be easily detached.—A. M. WAAS, *Dental Review*.

Removal of Tinfoil Adhering to a Plate.—Immerse plate in solution of nitric acid (one-third to three-fourths water), permitting the plate to remain in the solution for ten or fifteen minutes.—*Dental Office and Laboratory*.

Diatoric Teeth.—Diatoric teeth make good bicuspid crowns, especially for lowers. Bake a pin into the tooth and it can be adjusted with or without band.—OLIVER MARTIN, *Dental Digest*.

Celluloid Cement.—Mix 75 parts sulphuric ether with 25 parts alcohol in a well-corked bottle. After a few days add celluloid in small pieces to make an almost saturated solution. An excellent medium for uniting broken plaster models.—*Ohio Dental Journal*.

Fusible Metal Base Plate.—A base plate of metal furnishes a sure solid base on which to obtain the occlusion of the teeth, under the same conditions as prevail in the finished piece. You get an accurate bite, and have a base plate to work on that is rigid, not very thick, and offers good resistance. You can tell exactly whether there is sufficient atmospheric pressure.—GEO. F. GRANT, *International Dental Journal*.

Polishing Ground Surface of Porcelain Teeth.—A cleansing preparation known as *Porcela* (compounded for the purpose of cleaning and polishing porcelain bath-tubs, etc.) gives an excellent polish to porcelain teeth which have been ground. Moisten with water and use with a felt wheel on the lathe.—ED. C. DURYEE, *Dental Cosmos*.

Restoring the Enamel Surface to Porcelain.—When it has been necessary to grind the surface of a tooth to restore the polish work it over an Arkansas stone, keeping well moistened with liquid soap; finish with oxid of tin and a cork, at high speed, keeping well wetted with soap solution.—D. GENESE, *Ohio Dental Journal*.

Cleansing from Borax.—Borax can be removed from porcelain and gold by boiling in commercial muriatic acid, full strength. To protect the facings from borax coat, previous to investing, with a paint composed of yellow ochre four parts, boracic acid one part, mixed with boiling water.—J. L. YOUNG, *Dental Register*.

Cleaning Vulcanite Files.—When vulcanite files are clogged, place in a solution of one part saltpetre, three parts sulphuric acid, and one part water. Clean off with stiff brush and soap. This removes the vulcanite and sharpens the files.—*Ohio Dental Journal* (Trans.).

To Sharpen Files.—Wash with soap and a stiff brush, and immerse in a mixture of

Nitric acid	1 part.
Sulfuric acid	3 parts.
Water	1 part.

Let them remain in the fluid until well cut; then wash in lime water.—*Dental Hints*.

To Remove Plaster of Paris from the Hands.—Moisten a little sugar on the hands and thoroughly rub the same into the plaster adhering to the hands. It will disorganize the plaster, and is one of the best agents to use for this purpose.—*Electric Medical Journal*.

Cleaning Files.—Saturate a tooth-brush with chloroform and scrub the file vigorously. This will remove all wax and modeling composition that becomes clogged in the serrations.—C. J. HADLEY, *Dental Review*.

To Clean and Polish German Silver.—Anneal by heating to red heat and plunge in a solution of oxalic acid. This cleanses and softens the metal better than any method.—C. J. HADLEY, *Dental Review*.

A Splice for Rubber Tubing.—The small vials that hypodermic tablets come in can be utilized for splicing rubber tubing.—G. B. SPEER, *Dental Summary*.

Soft Soldering Powder.—Granulated soft solder, three parts; pulverized sal ammoniac, one part; pulverized rosin, one part. Mix.—*Druggists' Circular*.

Treatment of Lead.—Sulphur added to molten lead will cause it to be clean and pliable when cooled.—P. A. MARIOTTE, *Pacific Dental Gazette*.

Corrosion of Silver Plates.—Silver plates boiled in a solution of cream of tartar and salt will not corrode when placed in the mouth.—*Pacific Gazette*.

Wire Cutter.—Grind a notch in your plate shears near the joint and thus make a good wire cutter.—*Dental Hints*.

A Cast-gold Plate.—Dr. Livermore was the inventor of a cast-gold plate, the method being somewhat similar to "cheoplastic" work. From a correct impression a model was made of two parts plaster and four parts sand, on which tea-lead was burnished to the thickness desired for the plate. A special cast-iron flask, with detachable handle, was required. After removal of wax and lead the flask was put in the furnace and carefully brought to a dull-red heat, when the gold in a molten state was poured from the crucible into the opening in the flask, the whole being left in the coals until perfectly cold.—A. J. REDERICH, *Dental Review*.

Aluminum Plates.—Advise your patients that the aluminum plate is infinitely better than a rubber plate and you will have more satisfaction in putting in a set of teeth. Attach the teeth with rubber fastened in with the loop punch. Put one row of eight loops around the margin and eight more around the ridge.—L. P. HASKELL, *Items of Interest*.

Aluminum for Dental Plates.—Pure aluminum is not affected by the secretions of the mouth. Aluminum, as made by electrolysis, is free from contamination. Use a good thickness, twenty-two or even twenty gauge. Unless thick, the strain of mastication will bend it.—L. P. HASKELL, *Dental Digest*.

Finishing Aluminum Plates.—*First*, wash the plate in benzoin, or gasolin, to remove any grease or oil.

Second.—Apply a forty per cent. solution of caustic potash.

Third.—Apply nitric acid full strength. Then wash in clear water. Apply the potash and nitric acid by means of a small piece of cotton held in soldering pliers.—V. I. MILLER, *Dental Summary*.

Aluminum versus Gold, for Clasps.—The teeth embraced by gold clasps are especially prone to decay on the surface covered by the clasp. I have frequently used aluminum for clasps, and not one has caused trouble.—H. R. NEEPER *Dental Digest*.

Aluminum Solder.—Six parts aluminum, two parts zinc, four parts phosphor tin. Flux—stearic acid. This solder is sluggish and is pushed along the seam by means of a piece of iron wire in the form of a loop.—*Office and Laboratory*.

Aluminum in Prosthetic Dentistry.—Dr. Booth Pearsall, of London, after several years of experience, recommends for persons subject to gout the use of aluminum base with rubber attachments.—*The Dentists' Magazine*.

Silver as a Base Plate with Rubber Attachments.—A silver plate coated with mercury and covered with gold foil, to absorb some of the mercury, gives entirely satisfactory results, overcoming the affinity of silver for the sulphur in the rubber.—JOHN T. USHER, *Dental Cosmos*.

Gold Plate Strengtheners.—Wax in position on the plaster cast a piece of half-wound wire outlining a narrow upper plate. In the zincs this is represented by a ridge, which strikes up a groove across the gold plate, adding greatly to its strength. The gum soon grows into this so that little or no space remains.—L. READ, *Ohio Dental Journal*.

Cutting Down Gold Work.—The wire brush-wheel made for jewelers is a time-saver in cutting down and polishing crowns and bridge pieces and other metal work. It cuts rapidly. Can be procured at any jeweler's supply house.—L. P. BETHEL, *Ohio Journal*.

Punching Holes in Backings.—Slip over the pins of the facing a small piece of paper and trim it to the size you wish the backing to be. Remove this pattern and place on the plate, punching to correspond with the holes in the paper.—R. L. HESSER, *Dental Summary*.

Platinum and Gold Plate.—Melt with blowpipe pure gold on a piece of platinum plate, and roll to desired thickness, thereby saving thirty cents per pennyweight over buying the same from a supply place.—J. G. TEMPLETON, *Dental Register*.

To Restore Tarnished Aluminum.—Wash in water in which borax has been dissolved and a few drops of ammonia added.—*American Druggist*.

Annealing Gold.—You cannot anneal gold with safety by carrying it through the flame with a pair of pliers unless you consume a large amount of time; after holding it by one end and passing it through the flame you must put it down and take it up again by the other end and again pass it through the flame; otherwise you will have a piece of gold in which you have developed cohesion in one part and imperfect cohesion in another part, which will result in an imperfect filling.—W. E. HARPER, *Dental Digest*.

Babbitt Metal.—This is the only metal having all the fine requisites for a dental die, which are, (1) non-shrinkage; (2) hardness, so as not to batter; (3) toughness, so as not to break; (4) a smooth surface; (5) melting at a low temperature. The proper formula is copper, 1 part; antimony, 2 parts; tin, 8 parts, melted in the order named. Do not overheat, so as to oxidize the tin.—L. P. HASKELL, *The Dentists' Magazine*.

To Restore Zinc for Castings.—When zinc has become thick by repeated heating, the addition of an infinitesimal amount of aluminum will perfectly restore its fluidity. An alloy is first made of one part of aluminum to 25 of zinc. The thick zinc is then heated to its fusing point and small portions of the alloy added, until the desired effect is produced.—*International Dental Journal*.

Mellotte's Metal.—A great mistake is made in trying to get Mellotte's metal thin or fluid-like. It wants to be in a cheesy state, so that you can take it up with a spoon as you would take up a handful of snow and pack it in, and it will give a sharp outline. Do not reduce it to the melting stage.—W. H. TAGGART, *Dental Review*.

Spence-Metal.—The chief component parts of Spence-metal are iron and sulphur: its fusing point is lower than that of boiling water and it hardens quite rapidly. It must be melted over a *very slow fire*, otherwise it may catch fire with a very suffocating odor of sulphur. Stir with a wooden stick until it presents a very thick, bubbling liquid, then extinguish the fire immediately and leave undisturbed until crystals begin to form at the sides of the vessel—the opportune moment for casting the die. Pour quickly to the edges of the flask because of rapid hardening. It can be poured into a plaster-of-paris impression, first lubricating the impression with oil or vaselin.—M. BANK, *Western Dental Journal*.

Richmond Metal.—The advantage of Richmond metal over other impression metals is its low fusing point—160 degrees—52 below boiling water, enabling you to run a model over a gutta-percha impression.—J. P. ROOT, *Kansas City Dental Journal*.

To Restore Deteriorated Zinc.—Zinc which has deteriorated by repeated melting may be restored by keeping it in a molten state for ten or fifteen minutes, adding wax or fat, which separates the oxid and dirt from the metal.—CHAS. BOXTON, *Pacific Stom. Gazette*.

To Clean Molten Zinc.—When melted add a teaspoonful or two of muriate of ammonia, stir briskly with clean iron spoon, skim off the dirt, and the zinc will pour like water and at a lower temperature than before it was cleared. The same process will purify tin, lead, and babbitt metal.—B. E. MEAD, *Dental Digest*.

Babbitt Metal Die.—Pure lead cannot be poured upon a Babbitt metal die. The melting point must be reduced by the addition of one-sixth tin. This must not be poured hot, as it comes from the heater, but stirred until it begins to attach to the sides of the ladle.—L. P. HASKELL, *Pennsylvania Dental Times*.

Annealing Platinum.—If platinum be annealed in the open flame of a Bunsen burner it becomes very harsh, because it absorbs gas, but if it be fused in the muffle of a gas furnace, where no gas can get at it, or in an electric furnace, it will become as soft as tin foil.—JOS. HEAD, *Dental Cosmos*.

Proper Temperature at Which to Pour Zinc.—Thrust into the molten zinc a piece of dry white pine; if it chars badly the metal is too hot; if it chars very slightly—say a coffee-brown—it is about right. The cooler you can pour the zinc the better it will flow.—*Dental Office and Laboratory*.

Platinum Solder.—Twenty-five parts of platinum to seventy-five parts pure gold. Be sure to shellac the surface of a facing before investing to flow platinum solder on to the pins.—*Dental Clippings*.

Clasps for Partial Lower Plates.—Always have a lug extending onto the grinding surface so as to prevent the clasp from riding up and down on the tooth, to its injury, and also because the patient can bite at least fifty per cent. harder, there being no undue stress on the soft tissues.—W. H. TAGGART, *Dental Review*.

Aluminum Clasps.—On a plaster or fusible metal model of the tooth to be clasped a pattern of thin sheet lead is made, and a piece of aluminum plate cut to pattern. Holes are punched and countersunk to engage the rubber. Fit a clasp to the model, and also to the tooth in the mouth. Fill holes and countersink with wax, place on tooth, and bring away with impression, after which proceed as usual.—H. R. NEEPER, *Dental Digest*.

Clasping Cuspids.—The cuspid is a very hard tooth to clasp, but if instead of clasping from behind forward it is clasped from interior outward you reach either side of the tooth, the mesial and distal, which is especially valuable in lower cases.—CHARLES P. PRUYN, *Dental Digest*.

Separating Fluid for Plaster Casts.—

R. Shellac	3xii
Borax	3vi
Water	3x.

Keep in warm place and shake occasionally until complete solution; then add

R. Sugar	3xi
Glycerin	3vi
Water to make	3xvi

Shake well until sugar is dissolved; then decant with wide-mouth bottle. Saturate plaster impression with water and paint with the above; pour plaster immediately. Will penetrate the plaster, leaving a fine gloss upon the surface with no deposit of rosin to fill up the finer details of the impression.—*Dental Era*.

Soldering Aluminum.—A very good solder for aluminum and one which will not undergo rapid change in the mouth may be made as follows:

R. Aluminum	60 parts
Zinc	10 parts
Phosphor-tin	30 parts

A flux that works very well with this solder is stearic acid, or common stearine.—E. BUMGARDNER, *Western Dental Journal*.

Richmond Metal.—This metal offers the great advantages of very low fusing point—160 degrees, fifty-two below boiling water, enabling you to run a model over a gutta-percha impression.

The formula is as follows:

Tin	20 parts by weight
Lead	19 parts by weight
Cadmium	13 parts by weight
Bismuth	48 parts by weight

A Low Fusible Metal.—

Bismuth	48 parts.
Cadmium	13 parts.
Tin	19 parts.

Melts below the boiling point of water and is very hard. Melts at so low a temperature that it can be packed in with the fingers. A common plaster impression can be poured at once without waiting for it to dry; can even be poured in water.—R. MATTHEWS, in *Dental Cosmos*.

A New Metal as Base for Dentures.—

Silver	3.53
Platinum	2.40
Copper	11.71

This metal is elastic and takes a most brilliant polish. It is not acted on by the fluids of the mouth, and answers the same purpose as gold.—B. J. CIGRAND, *Dental Digest*.

Aluminum Solder and Flux.—

B. Aluminum plate	6 parts
Zinc	1 part
Phosphortin	3 parts
Flux: Stearic acid.	

Very useful for strengthening seamless aluminum crowns, to prevent wearing through on the occlusal surface.—C. H. WARBOYS, *Dental Register*.

Lennox Fusible Metal.—

Bismuth	5 parts.
Lead	3 parts.
Tin	2 parts.

Fuses in a ladle set in boiling water. Can be cast in a mold of modeling composition. Can be worked with great rapidity.—GEORGE F. GRANT, in *International Dental Journal*.

A Superior Varnish for Plaster Models.—

B. Gum sandarac	3ii
Gum mastic	3i
Venice turpentine	3ss
Alcohol	3v
Dissolve.	

This makes a varnish that is colorless and elastic, and which leaves a fine, glossy surface.—*Dental Era*.

Soldering-fluid for Gold.—

B. Boracic acid	3i
Ammonia carb.	grs. x
Soda bicarb.	3i
Ammonia aqua	3ss

Shake well before using.—*Dental Clippings*.

Investment Material.—

Powdered Silex	1 part.
Ground or Fiber Asbestos	2 parts.
Plaster	3 parts.

Excellent for crown and bridges, as there is but little shrinkage and no tendency to crack.—J. H. PROTHRO, *Dental Review*.

Fluid Flux that Does not Pit.—

Powdered borax	7 drachms
Powdered boracic acid, C. P.	7 drachms
Distilled cold water	6 ounces

Put all in a pint bottle and shake well until all is dissolved; then filter and pour back until perfectly clear.—

X. DODEL, *Dental Brief*.

Separating Varnish.—

Shellac	6 oz.
Borax	3 oz.
Water	1 qt.

Dissolve the borax in the water ; bring to a boil and add the shellac.—A. DAUGHERDAY, *Western Dental Journal*.

Soft Soldering Powder.—

Granulated soft solder	3 parts
Powdered sal ammoniac	1 part
Pulverized resin	1 part

Mix.

—*Druggists' Circular*.

A Superior Solder.—

Copper, pure	53 parts.
Silver	25 parts.
Brass pins	12 parts.

Melt the silver, add the copper, then the pins, and pour at once.—DR. BEEBEE, *Dental Cosmos*.

Soldering Fluid for Gold.—

Boracic acid	1 ounce
Ammonia carb.	10 grains
Soda bicarb.	1 drachm
Ammonia aqua	ss. ounces

Shake well before using.—*Dental Brief*.

CHAPTER II

(PART II)

CROWN- AND BRIDGE-WORK

Crowning a Misplaced Root.—Occasionally it is necessary to crown a root which is not in line with the adjoining teeth. When, in such cases, the facing must be brought forward bodily, so as to project beyond the root. Then remove the facing from the backing, leaving the backing waxed to the root-cap. The cap and backing are then removed from the model, invested, and soldered with a 22-carat solder. When this has been done, reinvest with the labial side up, and with 22-carat solder fill up the overhanging between the backing and cap, adding plate, if need be, so as to have enough to make a neat finish. When this has been done replace the fusing and solder it to the fixture. By this method a strong and cleanly crown can be made without unduly risking the facing by repeated soldering.—DR. CORNISH, *Brief*.

How to Improve Your Crown and Bridge Articulator.—The ordinary crown and bridge articulators now on the market have but one movement, namely, vertical. By the use of the mechanical saw and a few minutes time, enlarge the hole for the pin backwards, say one-quarter of an inch, making a slit for the pin to slide back and forth. Do the same on both sides, but only in the one piece (lower), and fasten a small rubber band to each end of the pin, allowing it to pass around in front. This elastic band will keep the articulator in a given position when at rest, but can easily be moved to give any desired position.—A. F. DONAHOWER *Dental Brief*.

The Open-face Crown.—At their best they have elements of weakness difficult to overcome. Nevertheless, properly made and properly placed, they have a field of usefulness all their own. Upon bicuspid teeth they are satisfactory and durable, especially so in cases which admit of the open-face being entirely open. When the bar connecting the two sides at the gum margin can be dispensed with the sides can be made to spring apart as the crown passes over the tooth, and to embrace more closely the tooth-neck when it is in place. The peculiar shape of the canine and incisor teeth not only increases the difficulty of making the crown fit accurately, but it also hampers us when cementing it in place. We miss the piston-like action of the tooth which assists so much in forcing the cement solidly into the intervening space when a full crown is pressed into place. Not only does the cement escape through the open face, but the screw-like motion necessary when manipulating it into place so displaces the cement that a thorough and compact filling of the space between the tooth and the crown becomes impossible. As a natural result the cementing is imperfect.—**WILLIAM H. TRUEMAN**, *Dental Brief*.

To Replace Porcelain Fronts without Removal of Bridge.—Grind tooth down same as for bridgework, fit same accurately in vacant space on bridge. Bore two holes in bridge (in center of space) to fit pins in tooth to be adjusted. On back of bridge around holes cut out a round circle (using round bur to make undercuts). With a small saw or knife roughen pins on tooth, after heating tooth and space in bridge thoroughly dry. Mix cement to same consistency as used for setting crowns, place same on tooth and in space, gently press tooth in position. With a heavy instrument press pins in circle cut out on back of bridge and fit space with amalgam.—**J. A. RICHARD**.

To Strengthen a Badly Decayed Root for Crowning.—Remove all the disintegrated dentin and enlarge the opening into the sound portion near the apex. Into one end of a platinum tube solder firmly a screw-threaded wire; cut

a slot in the open end of the tube, and with screw-driver tap the apical portion of the root with the threaded-wire end of the tube. Remove by unscrewing, cover the threaded end with oxyphosphate cement and screw firmly to place. Oil the outer surface of the tube to prevent amalgamation and fill around it with amalgam firmly packed in. The root being thus restored to its original strength, is ready for crowning, the post and disk method being recommended, the post to be cemented into the tube, which is firmly anchored by screw, cement and amalgam.—H. H. JOHNSON.

Setting Bands with Gutta-percha.—Wipe out the band or crown with oil of cajuput and warm both crown and pellet of gutta-percha and press the latter into the band; while still quite warm carry to root, allowing all the moisture to remain in the latter, which permits of easy withdrawal of band. Remove, and with hot, flat burnisher cut off all surplus, removing a portion from the inside if there appears to be too much. Repeat till it will almost go to place. When there is no exuding gutta-percha dry the root with absolute alcohol; make the crown as warm as you can hold it in your fingers; drop oil of cajuput in it and carry to place. By this means you are sure there is no excess or exudation of gutta-percha.—W. H. TAGGART, *Dental Review*.

Cause of Unsatisfactory Results of Open-face Crowns.—This may be attributed to either of two causes; either it is improperly made—that is to say, it does not conform to the shape of the tooth—or, while it may fit the tooth perfectly, it is not made strong enough to withstand the strain to which it is subjected. The result in either case is the same, the cement, being exposed, washes out and decay takes place. It is essential, therefore, that the crown should fit the tooth accurately, that it shall be made so as to prevent being forced up under the impact of mastication, and that it shall be strong enough to meet the requirements for which it is designed.—J. C. SALVAS, *Dental Brief*.

Crowning a Molar Decayed Below the Gum Margin.—

When moisture cannot be excluded fit and adjust a band before treating and filling the roots. With the band in position, and dam adjusted, the tooth can be kept dry, and the roots treated and filled satisfactorily. Cut the band down to occlusion contour, and turn in at the free edge slightly with pliers. Mop out the cavity with a 1 per cent. solution perchlorid of mercury in absolute alcohol, dry with hot air, and partially fill with Harvard cement. While at its stickiest put on a piece of fairly soft amalgam, and burnish from center to circumference, covering the cement, carrying the amalgam to the edges of the band. Add sufficient amalgam to cut free of the bite. Polish at a subsequent sitting.—J. H. BABCOCK, *Journal British Dental Association*.

Crown- and Bridge-work Decrowning and Immediate Pulp Extirpation.—Having ready a few points of orange wood, hickory or wedgewood well saturated with a strong disinfectant, with a disk cut a groove across the labial and lingual surfaces of the tooth; place one blade of excising forceps in each groove and remove crown. Without delay insert one of the prepared points at the mouth of the canal, and with a light mallet give a quick, sharp blow. Withdraw the plug, to which the pulp remnants will usually adhere. Prepare canal for post at once.—R. E. SPARKS, *Dominion Dental Journal*.

Difficulties in Bridge-work.—When a tooth has been considerably loosened by a loss of pericementum, even if the destroying cause be removed, it is subjected to constant motion, irregular in direction. Sometimes quite strong pressure forces it in one direction, and the result is a state of ever-present inflammation, due entirely to motion. If we stop this motion by using it as a bridge pier or clasp it to a plate the tooth will be more comfortable and be retained longer than if not so used. But great care must be taken that the occluding tooth or teeth do not put it under a tilting stress.—S. H. VOYLES, *Dental Brief*.

Investment Compound for Crown- and Bridge-work.—

An investment compound that is second to none for crown- and bridge-work and all soldering purposes is composed of plaster and ashes. The ashes may be prepared for use by sifting common coal ashes until all grit is removed and a soft, flaky powder left. The powdered ashes are added to the plaster at the time of mixing, the proportion being about two of plaster to one of ashes. This compound sets very hard, and apparently does not contract or expand, nor does it burn out, warp, or crack under the heat of the blowpipe. This compound has proved to be far superior to all mixtures containing marble-dust, asbestos; sand, etc.—FREDERICK C. BRUSH, *Dental Brief*.

Selecting a Crown.—In matching all porcelain crowns, the shade can be determined more accurately by examining both crown and natural teeth from the lingual aspect with the mouth mirror, while holding the crown in position in the mouth. In some cases a crown may seem to be a perfect match while looking at it from the labial side only, when upon examination from the lingual side there will be disclosed a distinct difference in shade. A crown should be selected having for its foundation-body material of the same shade as the underlying colors in all angles of light, but will match more closely after a few years of service, when the natural teeth gradually assume a darker shade.—P. P. DOVE, *Dental Brief*.

To Solder Cusps to Backing for Porcelain Facing.—

Convenient tweezers are made from wire tweezers with ring beaks. Flatten one of the rings and straighten the other, bending it at right angle to the other beak. Catch cusps and backing with Parr's flux, and remove from facing. Cover back of backing with rouge or whiting to keep solder from flowing there. Place the backing in the flattened ring, with the right angle point on the cusps; pressure will make perfect contact between cusps and backing. Will require less heat in final soldering, and consequently less liable to fracture facings.—H. B. BULL, *Items of Interest*.

To Prevent Injury to the Teeth of Plaster Models in Adjusting Crowns for Bridge-work.—Make little ferrules from very thin sheet copper, say 32 guage. After the caps are made and placed on the teeth in the mouth, and the impression taken to secure proper position on the cast, so that the dummy teeth may be properly ground and adjusted, place these ferrules inside of the abutment caps, adapting them to a snug fit before pouring the cast. When the cast is poured the caps will be easily removed from the plaster which are bound or covered by the copper ferrules, so that the caps may be removed and replaced as often as necessary without marring the copper-bound teeth, and also always compel the placing of the cap in exactly its right relation and position.—*DR. SIDDELL, Dental Register.*

Pinless Teeth for Dummies in Bridge-work.—Burnish pure gold, 30 gauge, to the under side of the tooth; turn the gold up against the lingual and buccal surfaces, cut the gold at the angles and burnish to the sides of the tooth; lap the gold at the corners, trim off the surplus, and solder the corners. Put the tooth in the cup, punch through the gold, insert post and catch with solder. The tooth is then ready for setting up and waxing to the abutments. Remove porcelains before investing in solder. Secure the porcelain in the cup with cement or gutta-percha ready to place in the mouth.—*McFERRAN CROW, Dental Review.*

Seamless Crowns.—Swaged over an accurate model of the tooth, they have a glove-like fit which cannot be attained by any other method. It is well to remember, however, that drawing a disk of gold plate to the form of a thimble does not increase its toughness, and that a seamless crown so made must be thoroughly reinforced. The narrow bar at the gum margin should be doubled, and any bridge attachment should be so extended as not to depend for security upon a small area of the crown.—*WM. H. TRUEMAN, Dental Brief.*

The Poor Man's Crown.—A pin, made from German silver wire hammered into shape and fitted to the root, has one end made jagged with the file and is then placed between the pins of a plain rubber tooth selected to suit the case. The pins of the tooth are bent to hold the wire pin. Small pieces of vulcanizable rubber (white preferably) are packed around the pins with warm instruments and molded to form a shoulder which will cover the end of the root. The rubber is then warmed, the pin inserted in the canal, the porcelain pressed to its proper position, and the rubber molded to proper shape by pressure. Trim, invest and vulcanize. Secure to place with oxyphosphate.—S. E. DAVENPORT, *International Dental Journal*.

A Temporary Crown.—Never dismiss a patient with an open space in the front of the mouth. Construct a temporary crown. Enlarge the root-canal, place a piece of German silver wire, about 16-gauge, in the canal; select a facing and slip it over the end of the wire, clinch the pieces around it, lay it on a bit of charcoal or an asbestos pad and solder it with soft solder. In five minutes the whole thing is done, and then it can be mounted with gutta-percha or temporary stopping. You not only relieve the patient of temporary disfigurement but you have the gum around the root nicely compressed, giving perfect access to the end of the root when ready to mount the permanent crown.—J. HART GOSLEE, *Dental Cosmos*.

Cementing Crowns and Bridges.—Having everything in perfect readiness, warm the crown and apply a thin coating of chloro-gutta-percha to the post. The chloroform evaporating leaves a film of heated gutta-percha. Adjust the crown to the root and remove immediately. This shapes the gutta-percha on the post. Allow the crown to cool and then cement to place as though no gutta-percha had been used. A crown so cemented can be removed at any time by the application of heat to the metallic portion of the crown, communicating heat to the post and softening the sheath of gutta-percha.—GEO. EVANS, *Ohio Dental Journal*.

The Open-face Crown.—The open-face crown is adapted only to those teeth which have normally good faces; this naturally confines their use to sound teeth or the labial or buccal surface of which is in a perfect condition. There are many bicuspid where the palatal half of the crown has been fractured or destroyed by caries, and restoration is necessary. In such cases the open-face is the best. As an abutment for large bridges they lack strength unless the band which covers the cervical portion of the tooth is thick and wide enough to give the desired strength. Where the bite is close the strain brought upon an open-face crown under the stress of mastication will force it out of position. From an esthetic point of view the open-face crown is much to be preferred to an all-gold crown, especially for anterior teeth; its usefulness depends on its accurate adaptation. If the band could be strengthened, this crown would be preferred as an anterior abutment for bridges.—G. W. CUPIT, *Dental Brief*.

Cusps for Gold Crowns.—To save investing, in moldine, in making a fusible metal die, provide a ring of metal that will fit closely around the rubber ring of Melotte's outfit. Punch a hole in a piece of rubber-dam, lay the dam over the top of the rubber ring, and secure in place with the metal ring. Push the tooth—natural or porcelain—which is to serve as model for the cusps through the hole in the dam to the depth desired for the cusps. Set the ring on a partly open bench vise or other convenient place, and pour the fusible metal.—A. B. BOYD, *Items of Interest*.

Setting a Logan Crown.—Make a cap over the stump of the root, with or without a band, and set a pin in the cap. Cut the pin from the Logan crown and grind to fit the cap and the articulation. Fill the concavity in the crown with pure gold and press to place until the gold spreads all over the bed of the crown. Put in the mouth with Parr's flux between crown and cap. Remove all together, invest and solder.—J. D. PATTERSON, *Western Dental Journal*.

Crown-work: Dowels that Fit the Root-canal.—Make a gold cap as usual and punch a hole as large as the mouth of the canal. Make a cone from a piece of thin platinum cut in the shape of a V and folded round a tapering mandrel with considerable lap of the edges. With cap in place on the root pass the cone down into the canal, and with a tapering piece of wood force it into contact with the walls of the canal; burnish the protruding portion down upon the surface of the cap and unite the two with hard wax. Remove, invest, and fill the cone with solder, also uniting the edges.—*The Stomatologist.*

Mounting Porcelain Bridges.—Porcelain bridges should always be mounted with gutta-percha in preference to cement, because of three important features: First, when so mounted they may be removed at any time without difficulty or injury; second, the impact from the stress of mastication is relieved by the cushion-like effect imparted by the presence of this material, and third, it is almost impossible to use cement when a saddle is employed without forcing the surplus underneath it, and when this crystallizes irritation is the invariable result.—HART J. GOSLEE, *Dental Review.*

Investment Compound.—An investment compound that is second to none for crown and bridge-work and all soldering purposes is composed of plaster and ashes. The ashes may be prepared for use by sifting common coal ashes until all grit is removed and a soft, flaky powder left. The powdered ashes are added to the plaster at the time of mixing, the proportion being about two of plaster to one of ashes. The compound sets very hard, and apparently does not contract or expand, nor does it burn out, warp or crack under the heat of the blowpipe.—FREDERICK C. BRUSH, *Dental Brief.*

Removable Bridgework: Advantages.—*First*, the hygienic properties from the opportunity to remove and clean the piece. *Second*, adaptability to varying conditions

of absorption, occlusion and support, affording greater range of application. *Third*, opportunity for restoring lost tissue in cases of extensive absorption, with more natural and more artistic results. *Fourth*, the support derived from contact with the soft tissues, fewer abutment teeth being mechanically required. *Fifth*, less mutilation of the supporting teeth is usually involved, and, *sixth*, greater longevity of the teeth is insured.—H. J. GOSLEE, *Items of Interest*.

Mounting Porcelain Bridges.—Porcelain bridges should always be set with gutta-percha in preference to cement because of three very important features: First, when so mounted they may be removed at any time without difficulty or injury; second, the impact from the stress of mastication is relieved by the cushion-like effect imparted by the presence of this material, and third, it is almost impossible to use cement without forcing the surplus underneath, with consequent irritation as the unavoidable result.—H. J. GOSLEE, *Dental Review*.

A Temporary Crown.—Whenever a permanent crown is being constructed for any of the anterior teeth a temporary crown is placed in position, allowing the operator to complete the crown at leisure, permitting the time necessary for artistic results. The temporary crown also serves to hold the gum away from the root, so that the final setting of the permanent crown is effected with much less difficulty to the dentist and much less discomfort to the patient.—J. E. NYMAN, *Dental Review*.

Gutta-Percha in Setting Crowns and Bridge-Work.—I am a strong advocate of gutta-percha, because it acts as a cushion, and in case of a patient accidentally biting upon a piece of shell or solder (as found in canned goods), or a piece of bone, the jar is not nearly so great. Also, if accident *should* happen to a bridge or crown, requiring its removal, it is almost as easily done as removing a plate from the mouth.—A. W. McCANDLESS, *Dental Review*.

Setting Logan Crown with Porcelain Body.—Prepare root with bevel at an angle of 45 degrees to a point well under the gum at labial surface. Burnish a piece of very soft platinum over end of root, leaving surplus posteriorly and at sides, and perforate for reception of pin. Mix body, and fill recess of crown over-full, and push home as if using cement. With bibulous paper absorb moisture, and remove surplus body with camel's-hair brush. Remove all together and carry to furnace. Baking and cooling will take about ten minutes. Have perfect fitting V-joint. Cement to place as usual.—R. M. SANGER, *Dental Cosmos*.

Shaping a Root for Crowning.—An important step in preparing an anterior tooth for crowning is that the root should be so beveled and paralleled that when the band is driven to place the further it goes toward the gum margin the tighter and snugger it will become, its relation to the root being that of a ferrule to a cane, going well under the gum—at least a 32d of an inch. This induces a beneficial change of condition, exciting a healthy circulation.—BURTON LEE THORPE, *Le Laboratoire*.

The Richmond Crown.—The banding of teeth as called for by the Richmond crown is highly objectionable. The disfigurement of the mouth ought in itself to exclude it; furthermore, it is a source of constant irritation, and if worn for many years the tooth will become loose. The band is not necessary; if the post in the canal is sufficiently long and properly adjusted and the end of the crown is properly fitted to the root end and the two securely cemented, there is no reasonable danger of failure.—EDW. EGGLESTON, *Dental Era*.

A Removable Bridge.—For those cases in which it is desirable to avoid shaping the teeth of abutment for the reception of caps, a removable single tooth bridge can be constructed by using a double loop clasp of platinum wire so shaped that one wire rests on the tooth just above the gum, the other just above the bulge of the tooth, the bridge being

further supported by very small spuds resting upon the edge of the occlusal surface. A saddle of very soft platinum No. 33 is swaged to the plaster model, and stiffened by flowing gold over it.—HOWARD T. STEWART.

Preparation of Root for a Banded Crown.—To allow the shaping to be done without pain or unnecessary hemorrhage, a small piece of gutta-percha retained for a day or so over the root-face will be found of advantage. The gutta-percha is best held in position by means of a disc of thin German silver, through the center of which is soldered a short length of wire. Warm the gutta-percha, place it around the wire and disc and press tightly, while warm, upon the root-face.—PERCIVAL S. CAMPKIN, *British Dental Journal*.

Amalgam in Crown-work.—Whenever a broken-down molar is to receive a shell crown, it is my view that the natural tooth should first be protected by as perfect an amalgam filling as can be made. This is especially obligatory when decay or fracture has destroyed a portion of the tooth below the margin of the gum; replacing the lost part with amalgam renders the fitting of the gold band more easily possible and painless and assures a tighter adaptation through the restoration of the circumference of the root to its full proportion.—R. OTTOLENGUI, *Items of Interest*.

To Replace Porcelain Fronts Without Removal of Bridge.—Grind tooth down same as for bridge-work, fit same accurately in vacant space on bridge. Bore two holes in bridge (in center of space) to fit pins in tooth to be adjusted. On back of bridge around holes cut out a round circle (using round bur to make undercuts). With a small saw or knife roughen pins on tooth, after heating tooth and space in bridge thoroughly dry. Mix cement to same consistency as used for setting crowns, place same on tooth and in space, gently press tooth in position. With a heavy instrument press pins in circle cut out on back of bridge and fit space with amalgam.—J. A. RICHARD, *Dental Brief*.

Preparation of Roots for Crowning.—In preparing roots for crowning it is good practice to make sure of your foundations. Before opening the canal fully, or using broaches, sterilize cataphorically by introducing some antiseptic, as argentine nitrate or formaldehyd, into the canal; then turning on the current for five minutes, and at the next visit remove the débris. In this way we get rid of the possibility of forcing morbid matter through the apical foramen.—SIR GEORGE ELLIOTT, *Journal British Den. Asso.*

Swaging Carved Cusps.—Place the die (Melotte's metal) on a piece of soft lead which allows the die to become closely adjusted and prevents *dancing*. Adjust a piece of gold of suitable size on the cusp of the die and place over it a piece of soft lead strap-shaped, say one-fourth inch thick, three-fourths inch wide, and one foot long; its length and width allows both a firm hold and a clear view of the work without danger of displacing the gold or hitting your fingers; a sharp blow or blows with a horn hammer will produce a clearly defined cusp.—X. DODEL, *Pointers for Dentists*.

Capping Live Teeth.—If live teeth, which are to be capped either for single crowns or bridges, are first dried and then coated with a chloroform solution of gutta-percha, and dried again by means of the chip-blower before placing the cement-filled shells in position, a bar to thermal changes is afforded and also protection against the chemical action of the phosphoric acid.—W. A. BOSTWICK, *Dental Office and Laboratory*.

Bridgework: Fixed or Removable?—The interests of the patient should be the guiding principle in all our operations; often careful examination plainly and distinctly indicates to him the best system suited to his case. To arrive at a safe conclusion, in nearly every instance, in selecting a system the same care should be exercised as pursued by the skilled orthodontist, namely, obtaining an accurate model of each jaw, occluding them for careful study.—A. P. BURKHART, *Items of Interest*.

Porcelain Joints in Bridge-work.—Porcelain is probably no cleaner than high-carat gold, but soldered joints in bridges are very apt to oxidize and collect an uncleanly covering. Unfortunately, porcelain bridges are limited to a small percentage of cases because of their friability, and for successful use the bite must be quite long and the occlusion favorable to a considerable mass of porcelain. In the greater number of cases the bridge does not allow of a sufficient mass of material to promise avoidance of breakage.—S. H. VOYLES, *Dental Brief*.

A Flux for Bridge-work.—Put in a cup

Boracic acid	℥j
Ammonia	℥ss
Carbonate of ammonia	dwt.ss
Bicarbonate of soda	dwt.ij
Water	℥iv

Boil until fumes of ammonia are no longer given off. Coat the piece all over the gold with the flux. Heat over spirit lamp to dry it on. Give a second coat if needed, leaving no spot exposed. Then scrape off where it is desired the solder shall flow; it will go nowhere else. The work will come out as bright as it went in and the polished surface will not be corroded or blackened.—*Western Den. Jour.*

Setting a Logan Crown with Gutta-percha.—For an unbanded crown cut an oval shaped piece of thin baseplate gutta-percha, perforate, and slip it over the dowel, up against the crown. Barb the dowel, paint with a solution of the baseplate in chloroform or eucalyptus, and wrap with a strip of warmed gutta-percha, which is readily molded to the dowel with the fingers. Press into the root, allowing the latter to be wet with saliva to facilitate removal. Trim off surplus, heat again, and try repeatedly until the crown can be pressed nearly to place; then moisten canal and face of root, and the gutta-percha on the crown, with eucalyptus, and press gently to place.—S. H. GUILFORD, *The Stomatologist*.

Replacing Porcelain Facings.—For replacing a broken porcelain facing the pins are frequently not long enough. They may be elongated by placing tubes of planous gold (platinum lined with gold) over the pins; invest and put under the blow-pipe after heating gradually; pure gold on the inside will unite with the platinum pins. Drill holes through the bridge to accommodate the tube-pins, and countersink. Pass the tubes through and grind off even with the surface. The ends of the tubes may be dilated to fill the countersink, and the space filled with gold foil.—G. W. MELOTTE, *Dominion Dental Journal*.

Recementing a Bridge Without Removal.—The crown at one end of a bridge having loosened through disintegration of the cement, a hole was drilled through the cap to fit rigidly the syringe-point, through which warm water was injected until everything was clean. Hot air was then injected until crown and tooth were dry and warm. The crown was then pulled down as far as possible, and with a Siqueland cement-syringe cement was forced in until it appeared at the gum margin, when the crown was at once pressed into place.—E. S. LAWTON, *Items of Interest*.

Filling Canal of Roots that Are to Be Crowned.—Thoroughly incorporate paraform (polymeized formaldehyd) with vaselin. Fill the canal with this, being careful not to force it beyond the apex. Push a gutta-percha point up to the apex and follow with others until filled. The excess of vaselin will exude with the cavity. When ready to insert the pin of the crown, with a very hot burnisher soften the gutta-percha opening sufficiently to admit the post.—F. B. LAWRENCE, *Western Dental Journal*.

The Banded Crown.—There is no occasion for using such a thing as is commonly known as a Richmond crown, though a Richmond crown minus the band will do good service, and some modification of a bandless Richmond crown can be well adapted.—EDW. EGGLESTON, *The Dental Era*.

Porcelain Molars in Bridge-work.—In all suspended gold crowns, having reinforced the shell crown, select suitable porcelain teeth and wrap with thin sheet platinum, first coating the platinum, inside and out, with flux. Place small bits of 22k. solder liberally in the crown and insert the platinum-wrapped porcelain; direct the flame to the bottom of the investment. This fills the great desideratum—economy of gold with minimum weight, without impairing strength of bridge.—I. A. CHAPPLE, *Am. Den. Weekly*.

Crowning Teeth with Live Pulp.—Pulps usually die soon after the tooth is crowned. Some attribute this result to arsenic in the cement, but I am inclined to believe it is the phosphoric acid. If carbolic acid or nitrate of silver were freely applied, there would be less danger of the pulp dying, but the most satisfactory plan is to use an acid which will not irritate the pulp. The better way is to use gutta-percha entirely.—D. HURLBUT ALLIS, *International Dental Journal*.

The Countersunk Molar as a Composite Crown.—Prepare roots with surface of stumps ground down level with surface of gum. Fit pins to root-canals, having projection made or loop. Burnish platinum disc to surface of stump, perforate for pins, which solder to place. Grind a countersunk molar to as good a joint as possible, adjust and wax to disc, using vulcanizable rubber to fill all interstices; pack in any ordinary flask, vulcanize and finish up.—JAS. B. HODGKIN, *Items of Interest*.

Setting a Logan Crown.—In cutting the root off follow the line of the root or you will have a disturbing condition that you never can get right. Cut so that in placing the crown you can see the joint all around; if where you can see it you can certainly fit it better than if under the gum; if the crown part is too large it is easy to bevel it; if the root is a little too large it is very easy to bevel it. It leaves a self-cleansing surface.—D. J. M'MILLEN, *Western Dental Journal*.

Preparing Roots for Crowning.—Before opening the canal fully, or using broaches, sterilize cataphorically by introducing some antiseptic, as argentic nitrate or formaldehyd, into the canal, then turning on the current for five minutes; and *at the next visit* remove the *débris*. In this way we get rid of the possibility of forcing morbid matter through the apical foramen.—WM. ST. GEORGE ELLIOTT, *British Dental Journal*.

Clasps in Removable Bridgework.—The clasp should be as wide as possible not to interfere with the occlusion or impunge upon the gum, as the narrower the clasp is, the closer it hugs the tooth; and the closer it fits, the more mechanical abrasion it causes; and the more abrasion, the more injury it does. The clasp should be sustained by frictional contact at a few point only.—H. J. GOSLEE, *Items of Interest*.

A Quickly Made Bridge.—With models on articulator as though for a partial plate, articulate plain rubber teeth in the space to be bridged. Remove teeth and wax and invest in plaster. Place rubber ring over investment and pour Melotte's metal for die. Remove teeth and wax and with shot swaging device swage a piece of gold that can be articulated on a model containing crown. Fill with solder, solder to crown, and bridge is finished.—A. OWEN, *Texas Dental Journal*.

Investment for Gold Casting in Bridge-work.—

Plaster of paris	5 parts
Plumbago	3 parts
Asbestos (grade 3)	6 parts
Soapstone (pulv.)	1 part

This gives a good heat-resisting investment for a modeling compound model, for occlusal castings, cusp buttons, etc. The plumbago gives a fine surface to the casting.—CEPHAS WHITNEY, *Items of Interest*.

Logan Crown Without Pin, With Amalgam Attachment.

—Cut off the pin and grind the porcelain level. Having a suitable undercut in the prepared root, roughen the surface of the hollow in the crown and paint it with chlorid of gold. Heat the crown and work the amalgam in with a burnisher; by the affinity of gold for mercury the amalgam will adhere to the gold surface. At once place the crown on the root, the two flat surfaces together.—W. A. CAPON, *Dental Cosmos*.

Indications for a Porcelain Bridge.—The indications for

a porcelain bridge should be plenty of space for porcelain to get the required strength to withstand the force of mastication, as we are entirely dependent upon its bulk for its strength. We must also consider the condition of the teeth to serve as abutments, their number and situation, the curve of the arch and most important, the length of bite.—O. M. LE CRON, *Dentists' Magazine*.

To Obtain a Metal Impression of a Tooth to be Crowned.

—If the tooth has a large cavity, fill with wax, and have the patient bite to get articulation. Trim to proper shape. Take plaster impression, and make plaster model. Cut off the tooth to be crowned. Pour Melotte's metal in the rubber ring, and before it sets place the plaster model of the tooth to be crowned, cusps down, in the metal. You will then have an exact impression in which to stamp gold crown.—CHAS. H. SCIVER, *Items of Interest*.

Gold Molar Crowns.—Use 20-carat gold, No. 4 Ash's

gauge, joined with 20- or 18-carat solder, and 16-carat solder for adding the cap. This is rather more difficult to manipulate than fine gold, but is stronger and grips the root more firmly, so much so that in many cases the attachment would be almost firm enough without cement. It does not stretch and lose its fit after trying on a few times.—J. H. BABCOCK, *British Dental Journal*.

To Replace Broken Facings.—Grind pins on backing. Then drill two holes to receive pins in facing, the facing having been ground to fit backing. Set with cement and rivet with plate punch and block of wood, being careful to keep wood between facing and punch. By carefully turning punch with point in contact with pins the facing can be made as firm as when first set. Finish pins with discs.—C. W. SIEFKEN, *Dental Brief*.

Bridge Attachment—the Carmichael System.—Essentially the idea is to cut a groove axially, on the mesial and distal surfaces, extending across the occlusal surface. A plate of metal is then fitted to the lingual or palatal surface and into the groove, making a secure anchorage, free from metal on the labial surface, and with no mutilation of the teeth or pulp devitalization.—J. P. CARMICHAEL, *Dental Register*.

Crown- and Bridge-work—Millott's Swaging Method.—No fusible metal is used in this new method. A little ordinary sealing-wax is dropped upon a short section of round brass rod and placed upon the form of the die-plate or the natural tooth selected. This is chilled and inserted in one end of a brass cylinder; over it are placed a disc of gold and a roll of soft rubber. A longer section of brass rod, or plunger, is introduced into the other end of the cylinder and the parts swaged in the ordinary way; done in a few minutes with the simplest materials and with no tearing of the gold.—*Dental Register*.

A Crown Polisher.—A convenient method for holding crowns, when polishing, is to soften a small quantity of modeling compound, shaping it to a point and pressing it into crown while warm. You can hold it readily, and it also prevents any possible chance of changing the form of the collar in polishing or dropping. When polished, pass it through the flame of the lamp and it is readily withdrawn.—J. F. WALLACE, D.D.S., *Canton, Mo.*

Setting Crowns and Bridges with Gutta-percha.—Set all single crowns with gutta-percha, putting it around the pin and around inside the band. Force into place while the root is moist, so that it can be readily withdrawn and the surplus trimmed away. Then dry the root, put in a little chloroform, and put crown in place. A bridge can be set equally well.—DR. BELYEA, *International Dental Journal*.

Banded Crowns.—In the great majority of cases it is wholly unnecessary to have any band whatever, for the reason that after long-continued experiment I have reached what I believe to be an absolutely irresistible strength in the iridio-platinum pin, when of appropriate size and exactly fitted to the root. That strength is reached by a 20 per cent. alloy of iridium with platinum.—N. S. JENKINS, *Dental Cosmos*.

Bridge-work: the Abutments.—A favorite form of abutment is to place an iridio-platinum post in the enlarged pulp-chamber of any of the six anterior teeth and then back up the tooth after the manner of backing a facing; trim this to the proper shape and flow solder over the surface, making the backing and the post continuous. This is a concealed yet very strong form of abutment.—EDW. EGLESTON, *Dental Summary*.

Bridge Abutment for Anterior Teeth.—A new attachment especially adapted to canines, though it may be used on centrals and laterals, consists of a gold inlay through which runs an iridio-platinum wire post fitting into the root-canal and extending approximately to support the bridge. It is confined entirely to the lingual surface, shows no gold and offers no obstruction to a close bite.—JOHN O. MCCALL, *Dental Cosmos*.

Restoration of Broken-down Molars with Aluminum Cap.—Secure good fit and articulation of swaged aluminum cap. Make proper undercuts in dentin, fill cap with cement, and press to place. Worthy a place in crown-work when

something less expensive than gold is desirable. Avoid contact with amalgam, as the mercury will unite with the aluminum, causing it to crumble.—A. E. PRESTON, *Dental Cosmos*.

Incisor Crowns.—Instead of building up the lingual wall to the natural contour leave it concave, to enable the lower tooth to bite into the hollow, so that should any rising of the lower teeth take place it would drive the upper root up into the socket rather than allow it to be pressed outward, as is so frequently the case when the tooth is built up to the original shape.—G. O. WHITTAKER, *Journal British Dental Association*.

Building up Broken-down Molars for Crowning.—Fit a band of 40-gauge copper accurately around the tooth and cement a staple of rigid metal in the root-canals. Pack amalgam around the staple and fill the band full. After the amalgam has set slit the band and remove it. A gold crown can then be adjusted in the usual manner. If the roots are separated, tea-lead can be used, as compatible with the soft tissues.—F. H. MCINTOSH, *Dental Digest*.

Crowning Live Teeth.—Use a crown with band and without post in anterior teeth whenever devitalization has not been effected, for the reason that in all cases where it can be done upon the live stump the danger of the band coming into sight after a year or two does not exist; it is only the devitalized root that lengthens in that way, and especially in the mouths of patients of mature years.—GEO. F. GRANT, *International Dental Journal*.

The Bandless Crown.—My requirements for a bandless crown are briefly these: small, rigid, flat, or square post, equal in length or, if possible, longer than the crown; root trimmed within free margins of gum and with convex end; perfect continuity and adaption of crown. Set with gutta-percha or chloro-percha and cement to allow for easy removal of pin in case of breakage.—F. E. ROACH, *Dental Digest*.

Crowning Lower Molar, with Split Roots.—When the two roots of a lower molar are split so far apart as to make it impracticable to draw them together, band each root separately and join the proximal edges of the bands near the cutting edge, and place a single grinding surface over the two, thus getting the rigid support of both roots, and making it possible to cleanse the neck of each root.—H. J. GOSLEE, *Dental Digest*.

Crowning Molars Which Are Decayed Below the Gum Margin.—Place pins in the roots; press wax down to the bottom of the cavity, shaping it around the pins, filling up the cavity and restoring the contour. Remove pins and wax, invest in plaster, dry out, remove the plaster, and replace by fusible metal. Try in, trim, cement into roots, and it is ready for a collar.—DR. WILLIAMSON, *British Dental Journal*.

The Care of Dental Bridgework.—Wearers of removable bridgework should be advised to remove and carefully, but thoroughly, cleanse the fixture before each meal, and afterwards also, if possible, over a basin partially filled with tepid water and with a suitable brush and a good soap. It is also usually best to remove the piece upon retiring, place it in a glass of water, preferably a properly diluted antiseptic solution.—H. J. GOSLEE, *Items of Interest*.

Crowning Teeth Having Cavities Extending Under the Gum.—Before grinding the tooth the gum should be pressed out from the cavity with a series of cotton or gutta-percha dressings, the cavity made retentive, and an amalgam filling inserted before commencing to grind, so that the grinding may make a continuous and smooth surface, and no obstruction offered to the band.—H. LEONARD DARRELL, *Dental Record*.

Painless Crown-setting.—Paint the inner surface of the crown with carbolic acid, ninety-five per cent. Dry the tooth and place the crown in position. The small quantity

of carbolic acid which will escape will anæsthetize the gums by leaving the crown in position a short time. A little alcohol will overcome the caustic effect if too severe. The crown may then be set without causing pain.—F. W. STEPHAN, *Items of Interest*.

To Restore Badly Decayed Root for Crowning.—Drill canal as for pin; trim orange wood stick to fit canal; coat the stick with thin film of wax. Having the canal dry and amalgam mixed, insert the waxed stick in the canal and pack amalgam around it, filling flush with gum margin. After amalgam has set, remove the waxed stick and proceed as required.—C. L. TOOL, *Dental World*.

To Repair Broken Pin in Logan Crown.—File the portion remaining in the crown square across; invest as preferred, and solder to it another piece of platinum pin, using a low grade of solder to avoid raising to a high temperature. Fourteen carat is perfectly satisfactory. Pins that are too soft may be strengthened in this way.—P. G. WOOD, *Ohio Dental Journal*.

Bridge Attachment.—When the remaining teeth cannot be ground sufficiently for bands without destroying their contour, or when they have receding gums and a tendency to be loose and it is desirable to avoid the irritation of bands, place gold caps over the cutting edge of the teeth, instead of bands or crowns for supporting the bridge.—C. T. WHINERY, *Ohio Dental Journal*.

Setting Porcelain Crowns.—Oxyphosphate of copper is the strongest cement for setting crowns. The objectionable black line at the joint can be overcome by placing some slow cement, mixed rather stiff, on the buccal edge of crown and of root. Then place the oxyphosphate of copper cement, mixed rather thin, on the lingual edge of root and in the root-canal. Insert the crown, and the stiff cement will push back the thin copper cement and prevent the black line on the buccal side.—CHAS. A. CLARK, *British Dental Journal*.

Anterior Abutments in Bridge-work.—When it is necessary to use a cuspid or bicuspid for abutment, use the method devised by Dr. Marshall, cutting a groove across the back of the tooth and down each side of it, into which a piece of platinum and iridium screw wire is fitted. Over this burnish thin gold plate and solder. This forms the forward abutment of the bridge, and when cemented in place shows no gold in front.—DR. ANDREWS, *International Dental Journal*.

To Remove a Crown Without Mutilating the Band.—In case of pericementitis with a crown, which it is desirable to replace, with a sharp spear drill, lubricated with glycerin, drill through the backing at a point over the pin. Enlarge the hole slightly with a round bur, and with a wheel bur cut the pin free from the cap, when you can work the crown off without mutilating the band.—R. M. SANGER, *Items of Interest*.

Investing Crowns and Caps.—The interior of all crowns and caps, unless previously well filled with plaster, should be thoroughly packed with the investment material to be used, using a small piece of wood or a fine-pointed spatula. If not perfectly filled, heat becomes concentrated in the air-spaces and materially increases the liability of burning or fusing of the parts.—H. J. GOSLEE, *Items of Interest*.

Richmond Crowns.—If the solder has failed to flow and make a perfect joint, make an amalgam of gold foil and mercury and pack it into the joint. Place in dry plaster of Paris and set over Bunsen burner to heat up and drive off the mercury; then finish up and polish.—A. C. McCURDY, *Dental Cosmos*.

Crowning Live Teeth.—Teeth which have lost their pulps have a greater tendency to recession of the gum, resulting in an elongated appearance of the tooth. There is some condition taking place in the pericemental tissues after the pulp is destroyed which causes this peculiarity.—W. H. JACKSON, *Dental Register*.

A Gold Corner on a Porcelain Facing.—Grind off the corner and burnish the backing over the corner; remove, invest and solder on the gold corner. Polish and replace on the porcelain. By this method you do not require a diamond drill. Admissible only in a mouth where other teeth are already contoured with gold.—L. A. STEMLER, *Items of Interest*.

A Wax for Carving in Crown and Bridge Work.—Take pink gutta-percha one sheet, and one sheet of paraffin and wax base plate. Melt the wax with dry heat and stir in the gutta-percha; when thoroughly mixed pour off and let cool. This is superior to modeling compound in crown, bridge and gold inlay work as it carves smoothly without chipping or flaking, and if trimmed too much a shaving may be added with a warm spatula.—C. B. POWELL, *Brief*.

Preparation for Crowning.—All old amalgam fillings should be removed before grinding as caries may be rampant underneath; these cavities should be refilled with either cement or amalgam before commencing to make the crown so that the band will not catch on the sharp edge of the cavity. Always complete root treatment before cutting down tooth or grinding it.—H. LEONARD DARRELL, *Dental Record*.

To Repair Gold Crowns.—To repair crack or hole in gold crown burnish over same piece 22 or 24 karat gold sufficiently large to cover space, flow upon same 14 or 18 karat gold solder, place it upon crack or hole with soldered portion in contact with latter, hold together with pliers, heat gently, and the patch will adhere readily to crown.—J. A. RICHARDS.

The Occlusal Surface in Crown-work.—If you will take ordinary paraffin wax and melt it in a large spoon and stir plaster of paris into it while it is in a molten condition, you will find that it will make one of the nicest carving materials that you have ever used. Make it plastic by heating and apply it to the primary crown and allow the patient to bite into it.—J. Q. BYRAM, *Dental Register*.

Banding a Tooth in which there is an Amalgam Filling.

—When gold is used for banding a tooth in which there is an amalgam filling, the gold may become permeated with mercury and so weakened that eventually it may break up. A piece of platinum foil may be burnished over that part of the band which requires guarding, and soldered to it before it is bent, and thus obviate the danger.—A. DRAKE, *Dental Record*.

Die for Gold Crown Work.—If impression material, prepared by mixing 12 ounces fine plaster with 3 ounces fine marble dust and 1 ounce whiting, is used for the impression, using a small pinch of sulphate of potash to hasten the setting, a fusible metal compound of 5 parts of bismuth, 3 parts of lead and two parts of tin can be poured without delay.—W. T. WALLACE, *Items of Interest*.

Swaged Cusps.—Press the plaster model of cusps into moldine and cast a cusp button of pure Watt's metal. When cool carbonize the surface by igniting a small piece of gum camphor, which deposits a beautiful layer of carbon. Run the counter die of Melatte's metal. Swage the gold into the counter die with lead and then use the button to bring out the fine lines.—H. J. GOSLEE, *Dental Review*.

The Dowel Crown.—The ideal dowel is made by using 14 gauge round iridium platinum wire which is flattened slightly, then filed to a tapering point, producing a dowel that requires the minimum of destruction of root structure and is largest at the junction of the crown and root, the weakest point of this kind of an attachment.—J. D. WHITE, *Dental Era*.

Bridge-work: The Impression.—For bridge-work a plaster impression is always indicated because the employment of any material which will draw perceptibly in removing from the mouth is not reliable; a wax "bite" is to be preferred to modeling composition because there is less danger of breaking off the plaster teeth in adjusting to the cast.—H. J. GOSLEE, *Items of Interest*.

Removal of Porcelain Crown Set with Gutta-percha.—

When, for any reason, it becomes necessary to remove a crown that has been set with gutta-percha heat the crown, using a miniature alcohol lamp made by passing a cotton string through a medicine dropper, cutting it off even with the tapering end. With a few drops of alcohol you have a flame about the size of a pin's head.—R. EUGENE PAYNE, *Items of Interest*.

Bridge Attachment.—In a bridge extending from first molar to cuspid, the molar bearing a gold crown, the cuspid was utilized without crowning, as follows: A post having been inserted in the root-canal, a gold inlay was placed in the lingual surface of the tooth, the inlay being constructed around and including the post.—EDNA M. THOMPSON, *Northwestern Dental Journal*.

Crowning a Live Tooth.—The secret of a perfect crown is the perfect adaptation of the band, and to secure this requires considerable time and unpleasant work in removing enamel, and we do not always have a patient who will stand this severe punishment, while death of the pulp is very apt to follow, caused by irritation through its near exposure.—J. P. ROOR, *Western Dental Journal*.

Gold Crowns.—As an abutment for bridge-work, and for restoring posterior teeth very badly decayed, the gold crown has its distinct place, but not for use when skilful filling would do all that is necessary. Its legitimate place is in connection with those teeth which would otherwise soon reach the stage which would condemn them.—T. A. BLACK, *Pennsylvania Dental Gazette*.

An Inexpensive Serviceable Crown.—Having prepared the root for reception of crown, select a plate tooth to suit the case and back up with beeswax. Warm it and press to place; trim off surplus wax; invest in flask; open up and pack with Ash's white rubber and vulcanize. Use 26-gauge platinum wire for pin.—J. F. STEELE.

Investment for Soldering Cap and Post for Crowns.—

The investment for soldering metal post to cap may satisfactorily consist of pumice powder merely. Take an iron or brass ferrule, fill it with pumice powder pressed down. Then press into it the pin and cap, drop a few drops of water on the pumice, and the flame may be turned on at once.—H. BALDWIN, *British Dental Journal*.

Setting Bridges.—Apply dam if practicable, and coat the pier teeth or roots with nitrate of silver, either by direct application or by cataphoresis. Advantages: Sensitiveness is obviated; cement adheres more surely; if the cement washes out, or if the band does not cover the root entirely, the silver nitrate protects it thoroughly; the tooth is rendered aseptic.—ALEX. JAMISON, *Dental Review*.

The Jacket Crown.—When it is desirable to preserve the pulp alive and a certain suspicious degree of sensitiveness remains after grinding and preparing the stump, a protective effect is gained by isolating the stump with a rubber band and painting with a strong solution of nitrate of silver. When subsequently covered it seems absolutely safe against future accidents.—N. S. JENKINS, *Dental Review*.

Removal of Cemented-in Crown-pin.—Apply rubber-dam, using a large enough piece to prevent the inhalation of fumes by the patient. Wrap a wisp of cotton on a broach, saturate with ammonia water, repeating until the cement has softened, removing it with an old, stiff broach. The length of time depends upon the solubility of the cement, generally from one to two hours being required, when the pin may be removed with a pair of pliers.—R. WALTER STARR, *Dental Era*.

Mounting Crowns.—In proportion as the decay of the root to be crowned extends below the cervical margin, in a still greater ratio is the use of cement contraindicated, because of the pain to the patient, the difficulty of keeping the root dry, and the liability to rapid disintegration.—L. J. MITCHELL, *Dental Review*.

The Diatoric Tooth in Bridge-work.—The use of diatoric teeth in bridge-work, each tooth in an accurately fitting gold cup, the cups soldered together at the proximal surfaces with a piece of gold plate from pin to pin across the lingual aspect, the whole overflowed with solder, gives a maximum degree of strength with minimum display of gold and an occlusion well-nigh perfect.—R. M. SANGER, *Items of Interest*.

Bridging Spaces in Soldering.—(1) Rub up in a mortar equal quantity of filings of an easy-flowing solder and filings of the gold to be soldered, with borax and water, making a thick paste, with which pack the joint to be soldered. The particles of high-fusing metal serve as a support to retain the shape of the mass, the low-fusing solder acting as a cement to unite the particles and bind them to the pieces being soldered.—F. W. SUTPHIN, *Summary*.

Mounting Crowns.—After preparing the root and accurately adjusting a collar, making a lap joint and soldering with pure gold, twenty-two parts, and platinum, two parts, carefully grind the neck of the porcelain crown to fit into the collar, and fuse both together with a low-fusing enamel.—ROBERT HUEY, *Dental Cosmos*.

A Simple Crown for Bicuspids.—Prepare the root as usual and insert a pin in the canal. Take an impression and grind a plate or rubber tooth to fit. With pin and tooth in position, pack a good amalgam around the pins and build up the palatine portion. When hard polish and cement into the root.—DR. V. NUKI, *Southern Dental Journal*.

Crystal Mat Gold in Bridgework.—In soldering the assembled parts of a bridge, by filling the interspaces between backings and crowns, etc., with crystal mat gold the solder may be flowed across where desired. It will stay better where it is placed than other forms of gold, and solder will flow over it very readily.—N. H. BISHOP, *Ohio Dental Journal*.

To Replace a Broken Facing on Bridge.—Remove all pieces of porcelain; grind pins of selected facing down to surface of porcelain, and with copper disc wet with water and covered with carborundum powder cut a groove in the facing to admit the pins remaining in the bridge, making slight undercuts on each side of the groove. Clean the facing and pins and cement to place.—C. C. BACHMAN, *Dental Office and Laboratory*.

Broken Pin in Root-canal.—When a pin is broken flush with or below the root end, with an S. S. W. trephine which will encircle the pin, cut out the cement around it. If the trephine will not reach to the end of the pin the new crown may be equipped with a tube of the same bore as the trephine, instead of a pin. A crown thus fitted is strong and can be cemented very satisfactorily.—THOS. J. MCGERNON, *Dental Hints*.

Fitting a Band.—To obtain the best results the gingivæ should be temporarily dilated and receded before preparing the tooth to receive a band. This can be readily accomplished by twisting absorbent cotton on a waxed ligature and tying it around the tooth against the gingivæ, the day before operating.—R. I. WENKER, *Dental Review*.

To Remove a Cemented Crown-post.—With a tiny point drill along one side of the post to as near the end as possible, carefully avoiding any danger of perforation. Next insert spiral broach in the drill-hole and literally saw away the cement from around the post. It is surprising with what facility a cemented post can be removed in this manner.—H. B. TILESTON, *Dental Summary*.

Removable Facings.—Back an ordinary facing having pins, one above the other, with gold, 30 gauge, and bend the pins down tightly. Raise the gold on either side of the pins to an angle of forty-five degrees and fill in the V-shape with solder. Finish to desired thickness, burnish a piece of pure gold to the backing, and stiffen with solder. Can be used same as Mason tooth.—A. E. PECK, *Dental Review*.

Adaptation of Crown to Root.—In the adaptation of a crown it is of vital importance that continuity of crown and root be obtained. The projection of either crown or root, forming an irregular surface, will act as a mechanical irritant to the gum tissues, affording at the same time lodgment for foreign matter, eventually establishing an unsanitary condition.—F. EWING ROACH, *American Dental Journal*.

Bridge Abutments.—If the tooth which is to serve as abutment is much tipped in position, instead of cutting away correct the malposition of the tooth, as is done in regulating, bringing it into an upright position, thus avoiding excessive cutting and consequent danger to pulp vitality. The bridge, when inserted, will hold the tooth in position.—S. H. GUILFORD, *Stomatologist*.

Repairing Hole in Gold Crown.—If, in the finishing process, a hole is made in a gold crown, paint the outside with a thin mixture of whiting, except around the hole. Plug the hole with gold-foil, touch it with a drop of borax water, and put a bit of gold solder inside. Fuse with blow-pipe, and success will be obtained.—E. A. RANDALL, *Dominion Dental Journal*.

Impressions in Crown-work.—For taking an impression of a stump prepared for a crown, a shell such as is used for a seamless crown, and which can be placed between the stump and the adjoining teeth, is very convenient. Shape it to fit the gum on the labial and lingual sides and take the impression with white sheet gutta-percha well warmed.—C. H. WORBOGS, *Dental Digest*.

Crown Paste.—If you wish to lay up comfort for the future and would avoid one of the pitfalls of the whole science, discard every material for posts except platinized gold or platino-iridium. You may be sure that all others will stretch or bend or corrode or do anything they should not do, and for that sin of small economy you will pay dearly.—GEO. F. GRANT, *International Dental Journal*.

Crowning Frail Roots.—After thorough cleansing and the removal of as much decayed dentin as is deemed safe, insert a gutta-percha cone at the apex; then heat a piece of wire, dip it in wax and press home with the gutta-percha and fill the canal with amalgam. At the next sitting remove the wire, enlarge the opening for the reception of a post and adjust a crown.—N. M. CHITTERLING, *Items of Interest*.

To Prevent Adhesion of Cement Under Bridges.—To avoid the danger of getting cement under the saddle of a bridge, cover all portions where it is not desired to have the cement stick, with gum acacia dissolved in water. If cement goes where it is not wanted the gum will dissolve from underneath and the cement will not stick.—GEO. W. WHITFIELD, *Dental Review*.

An Amalgam Crown.—Having a choice of plastic models of crowns of natural teeth, select one of correct size and shape, burnish quick-setting amalgam to the side of the model, leaving the centre hollow. When the amalgam has set it is polished, and you have a hollow amalgam crown which may be set upon a badly decayed root with quick-setting amalgam.—HENRY BARNES, *International Dental Journal*.

Broken Pin in Root.—Choose a trephine into the hollow of which the fractured pin will fit, and with engine carry it as far up as desired. Fit into the groove thus made around the pin a tube of English dental alloy and solder to a cap and band as for a Richmond crown. A tube even but one-eighth inch long gives great stability, the tube, band, and cap giving triple grip.—JOHN GIRDWOOD, *Dental Cosmos*.

Removal of Broken Crowns Set with Cement.—Zinc phosphate cement, around the pins of broken porcelain crowns, can be disintegrated by the application of ammonia water. The phosphoric acid leaves its combination with the zinc, uniting with the ammonia, and the compound falls apart.—E. C. KIRK, *International Dental Journal*.

Replacing a Broken Logan Crown.—When the porcelain of a Logan crown has broken away, leaving the post firmly fixed in the root, a Bonwill crown may often be made to serve in replacing the porcelain, trimming down the Logan post and fixing to it the post of the Bonwill crown.—WM. HERN, *Journal British Dental Association*.

Aseptic Cement for Setting Crowns.—It has been my habit for years to add to the cement powder, before mixing, about one-tenth part by bulk of hydronaphthol powder. This keeps the cement aseptic, thereby preventing odor, and it does not affect the strength of the cement in the slightest.—JOHN GIRDWOOD, *Dental Cosmos*.

Fitting Logan Crowns.—Grind root below level of gum all around; enlarge canal to receive Logan pin; insert temporary pin long enough to reach to occlusal edges of adjoining teeth; take plaster impression, withdrawing pin with plaster. Run Mellotte's metal model, withdraw pin; grind the Logan crown to fit this metal model.—C. J. SOWLE, *Dental Review*.

Molar Crown Restoration.—Anchor pins in the roots; pass a band of soft steel or gutta-percha, about 30-gauge, around the stump and draw the ends tightly together with flat-nosed pliers; remove and solder; contour and trim to occlusion. Replace band and fill with alloy to contour. At a subsequent sitting give final contour and finish.—L. P. HALL, *Dental Digest*.

Investment Material for Bridge-work.—An investment material that will not check or break is made from asbestos rope (to be had from any dealer in plumbers' supplies). Pick it to pieces and place in the water to which plaster of paris is to be added. This dries very quickly, will not change form, and does not require to be wired or banded.—A. G. SMITH, *Dental Review*.

Gold Crowns.—In crown-work an alloy of gold and platinum—twenty-two pure gold and two of platinum—is preferable. It is quite pliable, a strong metal, and does not show so much in the mouth. It can be soldered with pure gold, is dense, and takes a good polish.—WILLIAM TRUEMAN, *International Dental Journal*.

For Setting Crowns.—Mix, with heat and careful working, one part of gutta-percha and three parts of vermilion. For setting porcelain crowns with pin extending into the root-canal, or gold crown and cap, this will be found thoroughly resistant to the action of the fluids of the mouth.—W. H. ROLLINS, *Ohio Dental Journal*.

Painless Removal of Tooth Enamel.—Place a short piece of rubber tubing, fitting tightly around the tooth, well up on the gum, and leave it overnight so that the gum will be pressed back. The enamel may then be removed quite painlessly and without causing the gum to bleed.—H. HARTMAN, *Dominion Dental Journal*.

Setting Crowns with Gutta-percha.—Fit gutta-percha on the post and in the root, and get proper adaptation of crown. Dry the root and paint canal with cajeput or eucalyptus; dry a little and paint again with chloro-percha. Paint gutta-percha on post with chloro-percha; warm and drive home.—W. H. TAGGART, *Dental Review*.

The Logan Crown.—For the majority of cases the Logan is the best form of porcelain crown, and by burnishing the plate to a perfect joint to the end of the root, and filling in porcelain between, we have one of the very best crowns that can be made.—C. L. HUNGERFORD, *Western Dental Journal*.

Gold Crowns.—Stamp cusps of thin soft platinum, trim to size and articulate. Melt full of gold scrap of any desired grade. The platinum color will disappear, while the shape of the cusps remains intact. If any platinum appears to be exposed, remove in the finishing process.—R. E. SPARKS, *Dominion Den. Jour.*

Success in Crown-work.—Utility and permanent success depend mainly on two things: (1) the perfection of the joint with the root—that is, the fit of the band and the perfect exclusion of moisture during cementation; (2) the perfection of continuity—that is, its lateral contact with its neighbors.—J. H. BABCOCK, *British Dental Journal*.

Bridge-work Without Display of Gold or Pulp Devitalization in Anchorage Teeth.—An ordinary plate facing is backed in the usual way, and soldered to an iridium, platinum wire previously bent and fitted into slots in the adjoining teeth. Set in cement, and strengthen by building over the anchorage wires with cohesive gold.—ARTHUR G. SMITH, *Dental Review*.

Gutta-Percha for Mounting Bridgework.—The use of gutta-percha for mounting fixed bridgework is becoming more and more general in proportion as its advantages are recognized and its manipulation mastered, the advantage offered lying mainly in the comparative ease with which the bridge may be removed in the event of necessity, and without injury to the abutments.—H. J. GOSLEE, *Items of Interest*.

An Emergency Crown.—Cut from German silver wire a suitable length for the post. File one end to a point, and flatten the other end, notching it to go between the pins of a rubber tooth. Place in position on the prepared root and press softened wax around post, pins, and end of root. Remove carefully, invest, and complete with fusible metal.—L. C. JONES, *Dental Cosmos*.

"Taking the Bite" for Crowns or Bridges.—For the purpose of taking bites for crown and bridge work, etc., modeling compound fills an important place, as it is easy to manipulate, sets sufficiently hard to prevent its being readily bent, and does not break when forced to a thin edge as does plaster.—J. F. WESSELS, *Dental Brief*.

Backing Richmond Crowns.—Why should such heavy backings be used? If soft platinum—about 1/1000, as used in inlay work—be burnished nicely around all the edges after soldering and finishing the case, we get splendid margins, and the danger of checking is almost eliminated.—J. P. NICHOL, *International Dental Journal*.

The Seamless Cap.—It is possible with seamless methods to make a cap which needs no trimming or fitting in the mouth, but to do this the root must be carefully prepared with all overhanging enamel removed. Then fit and contour a copper band, using copper because easier to work than gold.—J. AUSTIN BUCKNELL, *Dental Era*.

To Give a Satin Finish to Gold Crowns.—After the crown has been polished, gold-plate it—not to hide any defect which there may be in the case, for plating would only render them more conspicuous, but to give a smooth, satin finish impossible to obtain by other means.—JOHN EGBERT NYMAN, *Dental Review*.

Soreness of Gingivæ after Crown Setting.—If the soreness is persistent slip over the tooth a ring cut from rubber tubing. Remove carefully the next day and spray the parts with tepid water and you will in all probability find a minute nodule of cement. Remove and the gum will rapidly heal.—B. J. CIGRAND, *Dental Review*.

Gutta-percha in Bridge-work.—Make it a rule, when making a fixed bridge, to set it if possible with gutta-percha cement and engage with the patient to come back two or three times a year to take off the bridge and reset it. The patient is benefited thereby more than we can tell.—DR. THOMPSON, *Dental Register*.

Crown Work: Platinum Bands.—One point I wish to bring out is the tolerance of the gums to platinum bands and bridges. The gums do not recede but, on the contrary, embrace the band and are perfect in color and cleanness.—HARRY F. HAMILTON, *International Dental Journal*.

Bridge Work and Rigg's Disease.—It is astonishing how firmly a few loose roots will support a bridge. A bridge constructed with special reference to the diseased roots tends to tighten them, and by holding the teeth rigid does much to eradicate the disease.—HOWARD T. STEWART, *Mississippi Dental Association*, 1900.

Removing a Post from Root-canal.—In drilling out a post from a canal it is about as safe to proceed slowly and use up a few burs in cutting the pin itself, rather than drill around it to loosen it; there is too much danger of perforation in the latter procedure.—CHAS. E. PARKHURST, *International Dental Journal*.

Soldering Gold Crowns.—Make a saturated solution of borax by boiling until no more will dissolve. When the solder is wanted to flow, moisten with this solution, and it will run like a flash. Mix yellow ochre to a creamy consistency for painting the parts to be protected from solder.—JOHN T. USHER, *Dental Cosmos*.

Seamless Crowns.—In the construction of seamless crowns the use of cement is preferable to plaster for the model, as it is stronger and can be polished after it is carved. A fine vent-hole put through the model assures a perfect cast when it is dipped into the hot metal.—C. H. WARBOYS, *Dental Register*.

Shaping Root for Crowning.—Never use disks upon the root, anywhere below the gum margin, on account of the danger of having grit in the tissues surrounding the root. This is the cause of much of the subacute gingivitis found about teeth that have been crowned.—JOHN E. NYMAN, *Dental Cosmos*.

Fitting Bands or Caps.—When decay extends below the gum margin, pack a little cotton saturated with chloro-percha in the portion below the gum. The band can subsequently be easily and accurately fitted, and you can see your work.—C. O. HOOD, *Dominion Dental Journal*.

Enameling Gold Caps.—Use the Jenkins porcelain to enamel gold caps; it is easily flowed over the gold. It is necessary to make holes in the gold crown; split the crown, and the porcelain flows right along, just like plaster through a lath partition.—F. K. LEDYARD, *Pacific Dental Gazette*.

Crowning Live Teeth.—There is only one time when it is permissible or excusable to crown without destruction of the pulp. That is in old age, when there is a receded pulp and the tooth is consequently not sensitive or liable to death from other causes.—J. P. ROOT, *Western Dental Journal*.

Bending Pins.—A good many porcelains are broken by using the burnisher in bending down the pins. If you take the pin-roughening pliers and mash the pin it is easy to bend it down without crowding too hard against the facing.—J. P. NICHOL, *International Dental Journal*.

Replacing a Broken Crown.—When it is impracticable to remove the pin from the root, run a drill or trephine around the pin, make a tube of platinum to fit the post and solder to cap as for a Richmond crown, proceeding as for any other crown.—E. E. CRUZEN, *Dental Cosmos*.

Swaging Platinum Saddle for Porcelain Bridge.—In case an absolutely perfect adjustment does not result, heat the counter-die as warm as can be held in the hand, and place in counter a piece of base-plate gutta-percha and swage again; the saddle will fit perfectly.—W. H. TAGGART, *Dental Review*.

Setting Crowns.—In setting crowns if, before the cement is used, the stump is brushed over with a little copal-line varnish, it will not make any difference in the setting of the cement and will prevent any bad action of the acid or arsenic that might be in the cement.—H. J. MOORE, *Dental Review*.

No. 120 Rolled Gold in Crown- and Bridge-work.—Always use No. 120 rolled gold for backing up teeth, for the base of crown, for stamping up cusps, and for the base of cast fillings or hood abutments.—C. L. ALEXANDER, *Dental World*.

Failures in Bridge-work.—Faulty articulation will oftentimes play havoc with what might otherwise have been a perfect piece of work. The occlusion with the teeth in the opposing jaw has everything to do with the success of bridge-work, and nothing short of perfection in this particular will answer.—F. E. LOGAN, *Dental Register*.

Mounting Crowns and Bridges.—Give the preference to cement, but always observe the precaution of coating the inside of crowns and the post with a thin film of chloro-percha or gum shellac before the cement, to facilitate removal in case of necessity.—H. J. GOSLEE, *Dental Register*.

Crowning Teeth With Live Pulp.—Painting the crown with several coats of shellac before putting on a cap with cement lessens the liability to death of the pulp. The shellac also helps to hold the cement.—J. B. HODGKIN, *Dental Digest*.

Cleaning Gold Crown Bridges or Regulating Appliances after Removal from the Mouth.—Place them for a short time in a saturated solution of sodium dioxid. This will destroy the offensive accumulations usually present and render them aseptic and easy to polish.—W. C. SMITH, *Dental Review*.

Bridge-work.—Study carefully the natural in order to imitate most successfully. Select as the goal as close an approximation as possible to that given by the donor of "every good and perfect gift"—namely, a *perfectly natural artificial occlusion*.—R. B. HOWELL, *Dental Register*

Trimming Roots for Crowns.—To control bleeding tincture of iodine is preferred, for it penetrates deeply and contracts the vessels, while some agents advised only coagulate the blood at the surface.—H. C. MERIAM, *International Dental Journal*.

To Lessen the Danger of Cracking Porcelain Facings.—Coat the teeth with shellac. Under high temperature this forms a protecting film of carbon on the facing and lessens the danger of cracking.—J. E. NYMAN, *Dental Review*.

Gutta-percha for Setting Crowns.—Why not set all crowns with gutta-percha? If it is good for bridges, it must be better for crowns. The red base-plate seems to act best.—*Dental Review*.

Selection of Porcelain Facings.—You will often get more artistic results if you match in shade the same tooth on the other side of the mouth, than if you attempt to match the adjacent teeth.—JOHN E. NYMAN, *Dental Cosmos*.

Relieving Pain After Setting a Crown or Bridge.—The pain caused by setting a crown or bridge may be alleviated almost instantly by the free application of campho-phenique upon the gum.—H. A. CROSS, *Dental Review*.

Impression of Root End.—Place a projecting wooden peg in the canal and pack gutta-percha around it, forcing the gum out of the way. The pin will come away with the impression.—R. W. STARR, *American Dentist*.

Setting Crowns.—Although a little more difficult, it will be found much more satisfactory in the end if crowns are set with gutta-percha instead of cement.—C. T. BARKER, *International Den. Journal*.

A Cement Syringe to be Used in Setting Crowns and Bridges.—After mixing the cement to the right consistency, place in syringe and eject into the canal.—H. L. CRITTENDEN, *Dental Review*.

An Emergency Crown.—The old style pivot tooth can be quickly placed in position and made remarkably secure by using cement in the crown and root, observing the precaution to keep the wood perfectly dry in order to insure union with the cement.—*Den. Weekly*.

To Bend a Crown-post.—Grasp the post with a pair of crown-contouring pliers. The convex jaw of the pliers forces a portion of the post into the concave jaw, thus bending it without strain on the crown.—R. W. STARR.

The Bandless Crown.—If in fitting the bandless porcelain crown to the root, the same care is taken as in fitting a band, the operator can reproduce the natural crown of the tooth in every way, a crown as near perfect as any crown can be.—U. M. RICHARDSON, *Dental Review*.

Cementing on Bands and Crowns.—Dry the tooth and paint with shellac varnish before applying the cement. This gives durable adhesion, and should the cement dissolve the shellac will protect the tooth and prevent decay under the band.—W. G. LANCE, *Dental Cosmos*.

Polishing a Gold Crown.—To prevent marring a gold crown when polishing, fill it with modeling compound, and while it is still soft insert the end of a stick or instrument handle into it. When finished, soften the composition and remove.—*Dental Hints*.

To Stiffen a Platinum Pin.—Platinum and platinoiridium at times are too weak for posts, whether plain or threaded. To strengthen and stiffen either, flow over the entire surface a thin layer of 18 or 20 carat gold plate or solder.—R. W. STARR.

Crown Pins.—We know that the farther into the ground a fence post is placed the more secure it is. So also, the deeper into the root we put the pin, the more secure becomes the attachment, and the whole root bears the shock of any strain.—R. L. SIMPSON, *Dental Cosmos*.

Porcelain Crowns.—A band set in a groove, cut in the face of the root, gives the strength of a collar, without exposure of gold, irritation of tissues, or shaping up of root, as in the reception of an outside band.—WM. ERNEST WALKER, *S. Br. Ntl. Den. Asso.*

Measuring Root-canals.—The round rubber waste made by using the punch on the rubber-dam, if pierced by a broach, can be readily adjusted to any length, and makes a neat little marker.—M. A. MASON, *Indiana Den. Jour.*

Setting Logan Crowns.—Gilbert's antiseptic balsam varnish applied to a Logan crown, and also to the stump of the root before setting the crown, greatly assists in its retention.—H. B. HINMAN, *Ohio Journal.*

Flaws in Bridge Soldering.—When a flaw occurs dust a particle of flux, clean out the depression with an inverted cone bur, and fill with crystal gold.—A. W. THORNTON, *Dental Review.*

Spraying the Gum.—Try spraying the gums with ethyl chloride around the root of a tooth that you are preparing for a crown.—R. WALTER STARR.

Removable "Fixed Bridges."—If the inside of all caps and crowns is painted with chloro-percha, removal in case of accident is greatly facilitated.—DR. RICHARDS, *Dental Review.*

Sealing-wax in Crown-work.—Sanford's "No. 2 Red American Express" possesses all the requirements of a sealing-wax suitable for crown-work.—O. H. SIMPSON, *Western Dental Journal.*

Soldering Bridge-work.—Do not use low-grade solder on a crown or bridge. It contracts, pits, oxidizes, and makes weak construction.—W. SPAULDING, *Dental Record.*

A Deodorizer.—To destroy the unpleasant odors from an old crown or bridge, dip them in electrozone; they will be deodorized immediately.—*Dental Review.*

Crowning Badly Decayed Roots.—Secure anchorage in the root by means of a screw post; build amalgam around it and restore the shape of the root. When hard, polish and then fit the band as usual.—DR. COOKE, *International*.

A Temporary Crown.—Solder a wire to an ordinary rubber tooth. Contour and retain the crown with gutta-percha.—J. H. KENNERLY, *Dental Digest*.

CHAPTER III

(PART II)

ORTHODONTIA

Simplified Construction of Regulating Plates.—Make the plate a little thicker than usual, and after vulcanizing attach the springs, wires, levers, etc., by drilling two holes from one-fourth to one-half inch apart, and with a bur make a groove on the palatal side between the holes of sufficient depth to receive the wire so that the surface will be level when the wire is in place. Thread the end of the wire through one hole and back through the other, and with a pin-hole punch compress the wire until the angles firmly grip the plate; thus rendering it a fixture. By drilling new holes and inserting new springs, etc., one plate will be sufficient to meet all exigencies until the deformity is corrected, when the retaining wire may be adapted in the same way.—E. BRANDON WHITE, *Dental Review*.

To Rotate a Tooth with Silk Thread.—The portion of thread that forms the noose to grip the tooth must not be waxed; if waxed it will slip its hold. Before applying, double the thread, cover about half an inch at the fold with thumb and forefinger, and wax from this portion out to the free ends. Put a double noose of the unwaxed portion of the silk around the tooth to be rotated and tie—first a surgeon's and then a granny knot, drawing as tightly as possible. Coil the threads two or three times around the root in the direction the tooth is to be rotated, stretching the thread till it will yield no more, and make your fastenings.—W. J. YOUNGER.

Orthodontia: Diagnosis.—A proper diagnosis of each case requires not only a definite appointment for examination of the mouth, but the taking of impressions at that sitting, and postponement of decision as to plan to be followed until the casts are studied. The patient should then be seen again, and the decision arrived at from the study of the casts tested by a further study of the face.—S. E. DAVENPORT, *International Dental Journal*.

A Factor in Failures in Tooth Regulation.—The part played by the lower anterior teeth is an important factor in the regulation of protruding superior teeth. Failure to give the former due consideration is often the cause of failure to secure permanent good results. If entirely freed from occlusion, the teeth will be more likely to stay where they are put. The lower incisors and cuspids will often have to be shortened, drawn back, or even forced back into the alveolar process, or they may force the superior teeth forward again.—H. W. MORGAN.

The Use of Silk Thread in Regulating.—There is a popular fallacy extant that silk thread, in common with other threads, tightens with moisture, but this is a mistake, for moisture does not contract silk. The silk must, at the moment of applying, be stretched till it will yield no more; then tie quickly. It is the contractility of the thread after being stretched that gives it its wonderful power. The silk should be well waxed; this increases its textile strength by uniting the minute fibers on the sides of the filament.—W. J. YOUNGER.

Regulating Without Appliances.—Where the bicuspid are to be moved forward, or the centrals or laterals spread, open slightly with separator and place cement between the teeth; when this has hardened remove the separator and leave the cement *in situ* for several days. Repeat as often as necessary until the teeth attain their proper places. This is not expensive to the patient and causes less annoyance than regulating appliances.—W. H. REABIN.

Preventive Treatment in Orthodontic Practice.—At the fourth or fifth years of age you can very often see that you will have malocclusion; why not take steps to prevent it? It is better to have the teeth erupt in their proper positions than to push, pull or shove them into position after they have taken an abnormal one. If at four and a half or five years there are no spaces between the anterior teeth there will not be room for the permanent incisors. A little stimulation at that age, simply in the lower arch, will widen both the lower and the upper if the upper teeth have well-defined cusps.—**I. LOWE YOUNG, *Dental Cosmos*.**

Prevention of Irregularities.—The proper thing to do is to start far enough back to prevent irregularities. As soon as the first permanent molars and the permanent central incisors are in place every effort should be directed toward keeping them in their proper places. To this end the intervening deciduous teeth should be kept in their respective places until nature removes them to make room for their successors. Watch them; fill them if necessary, but do not allow them to be removed prematurely. If this is done there will be, as a rule, no irregularities in the permanent teeth.—**GEO. B. CLEMENT.**

A New Retaining Appliance.—A simple retaining appliance which combines the requirements of security, cleanliness and comfort, is the device of Dr. George C. Ainsworth. It consists of anchor bands with small tubes attached to the buccal sides, into which are inserted the ends of a labial wire bent at right angles to itself, and which is continuous around the arch, thus holding all the teeth that have been moved out, while the labial wire holds the front teeth in. It is securely cemented in and is worn without discomfort, while the labial wire is removable at will, being readily readjusted by the patient.—*International Dental Journal.*

Jumping the Bite.—An inclined plane for jumping the bite and fixing the occlusion, which is automatic in its action, requiring no attention from patient or operator, and which is both cleanly and effective, is made of a fairly heavy piece of platinized gold plate soldered to bands of seamless tubing encircling the upper central incisors and firmly cemented on, with a round lug wire resting on the ends of the laterals, the gold being dressed away from the palatal side of the laterals as much as possible.—GEO. C. AINSWORTH, *International Dental Journal*.

Orthodontia.—While there is no one best rule for regulating all cases, there is generally one best way of accomplishing the highest results in a given case. The highest aim should be to accomplish not only the greatest possible degree of beauty in facial form, but also an improvement in mental expression through the form. Movers of teeth there may be many, but of moulders of the face, to the highest possible benefit, there are not so many.—JOHN NATTING FARRAR, *Dental Record*.

Loss of Deciduous Teeth.—If a temporary tooth is lost prematurely through decay the space should be maintained until the permanent tooth erupts, otherwise the teeth that are mesial and distal to this tooth will migrate until they fill the space partially or completely and there will be no room for the eruption of the permanent tooth and it will either erupt in malocclusion or remain imbedded in the alveolar process.—T. J. BRADFORD, *Dental Summary*.

Diagnosis in Orthodontia.—Diagnosis is of equal and, if possible, greater importance than treatment, for it must govern each and every step that follows. On diagnosis should depend each hour in the treatment, and each appliance used—its form, structure, temper and tension, even to the last retainer. On the result of diagnosis must depend, to no small extent, the appearance and even the health of the patient for the rest of his life.—EDW. H. ANGLE, *Items of Interest*.

The Countersunk Nut in Orthodontia.—The teeth being banded and a bar soldered on the outside of the teeth, a hole is drilled through the bar opposite the tooth to be moved, and counterbored to allow the nut to enter flush with the face of the bar. A bolt is then soldered to the band around the tooth to be moved, passing through the hole drilled in the bar, and the nut turned on. As the bolt comes through the nut by the movement of the tooth, the end is ground down smooth. There is no limit to its use except the ingenuity of the operator.—W. W. SHRYOCK, *Items of Interest*.

Regulation Plates; the Bradner White Method.—In this method of construction no attachments whatever are vulcanized into the plate, the latter being made about a line thicker than where springs, wires, screws, etc., are vulcanized in. For the attachment of these, holes are drilled through the plate and a groove made on the lingual side to receive the protruding ends of the wires which are bent and compressed until the angles firmly grip the place. One plate with a change of springs is usually sufficient to meet the exigencies of any case.—*Dental Review*.

Tooth Regulation.—The question has been asked, "How long will a tooth that has been moved from its original position have to be retained in its new position before it will become firm and remain where it has been put?" The answer is: As soon as cusping with the occluding tooth is well established the moved tooth will stay where it is put. This implies that the tooth has been put into the position designed by Nature for that tooth; otherwise the cusping which should hold it in place will not be accurate.—E. A. BOGUE, *British Dental Journal*.

Prevention of Irregularity.—When deciduous teeth are lost before the permanent teeth are ready to erupt, to prevent the adjacent teeth from traveling, or tipping, insert a vulcanite plate to occupy the space of the lost tooth, cutting it away from time to time to accommodate the erupting tooth.—*Dominion Dental Journal*.

A Case in Regulating.—In a case in which a lower incisor was considerably within the arch, without sufficient space between the teeth to allow it to be moved forward into place, the mal-placed tooth was fitted with a platinum cap, cemented to the tooth and a little porcelain tooth baked to the outside of it, so as to stand in line between the other teeth. Wedges on either side of the artificial tooth will push the adjoining teeth sideways until room is made for the mal-placed tooth, when it will be brought forward into position.—DR. PURY, *Dental Cosmos*.

Malocclusion: Why Correct Early!—There are many reasons why a case should be started early. Among others, the cartilaginous condition of the alveolar process causes it to yield readily to pressure; the sockets of the teeth are very large and often there is no septum of bone between the alveoli. There is little or no pain if the case is properly handled at an early age. The patient will not be so sensitive about the looks of appliances, nor will retainers have to be worn so long.—T. J. BRADFORD, *Dental Summary*.

Premonition of Irregularity.—When a child reaches the age of four a very important change takes place. When everything goes on regularly and the blood supply is good, there should be quite marked separation between the anterior teeth. If this separation does not take place, and the child does not lose its baby face, we may prophesy future deformity, and should study the case carefully, correcting what may be wrong in nourishment, exercise, etc., often thus avoiding mechanical interference.—EBEN M. FLAGG, *Items of Interest*.

Regulating Cases: Our Small Patients.—One or two visits from the little patient is best before putting on any appliances. This not only gives the operator time to study the case, and the habits of the patient, but aids in dispelling the fear that usually accompanies a patient on the first visit. To dispel fear at the start is half the battle.—J. N. McDOWELL, *American Dental Journal*.

Impressions in Orthodontia.—The impression having been removed from the mouth and thoroughly dried, the small pieces are united to the larger ones by a cement made of celluloid cut with equal parts ether and alcohol. The larger pieces are united with wax outside the tray. To obtain a smooth model the impression is first coated with orange shellac varnish which should penetrate the impression deeply, when dry followed by a second coat of thin shellac, with a final coat of sandarac varnish.—B. ABELL, *Dental Register*.

Orthodontia: The Time to Begin Treatment.—Correct and early diagnosis and treatment begun as early as five years will, in many cases, avoid and prevent serious cases that in later years would prove most difficult to treat with perfect success. The most serious cases of malocclusion are clearly indicated in temporary teeth, and may be diagnosed as early as three years. Watch them and prevent growing deformities.—VARNEY E. BARNES, *Dental Summary*.

Retention of Regulated Teeth.—The harder the teeth are to move, the more difficult they are to retain. In one very obstinate case—"a right central playing leap-frog with the left"—the tooth persisting in starting back to its original position after three months wearing a retaining appliance, with a sharp bistoury, all attachment between the tooth and tissues (but not quite to the apex) was cut loose; there was no further trouble.—W. J. YOUNGER.

Orthodontia and Rhinology.—The intimate relationship and the interdependence of these two specialties is not alone a matter of neighborhood relation, but dates back to a common embryological development. The naso-frontal process which enters into the formation of the intermaxillary portion of the upper jaw also has an important part in the formation of the septum and bridge of the nose. The palatine plates, too, forming the roof of the mouth and the floor of the nose are common to both specialties.—ROYAL S. COPELAND, *Items of Interest*.

Orthodontia: Spreading the Maxillæ.—In very young patients, before the cuspids and bicuspid have come in—at seven or eight years of age—by spreading the maxillæ the unerupted cuspids and bicuspid are moved while still embedded in the bones, and will come in in perfect alignment, straighter and more firmly fixed in their sockets than if forced into occlusion after eruption.—R. OTTOLENGUI, *Items of Interest*.

Nickel for Regulating Appliances, etc.—The five-cent nickel coin metal makes excellent bands for regulating appliances. It can be rolled as thin as the Angle bands; it solders easily with silver solder or 18K gold. It also makes excellent screws and nuts. Cut in narrow strips it makes excellent strengtheners for rubber plates, similar to the Hall white metal bars.—N. H. KEYSER, *Dental Office and Laboratory*.

Retaining Appliances.—The process of resorption is much more rapid than that of rebuilding; hence the necessity for the retaining appliance. The rate of difference is almost one to three. Hence if it should take from six to eight months to get the teeth in position, they should be held there at least a year, if not longer, according to the age of the patient.—H. S. VAUGHAN, *Dental Digest*.

Extraction in Tooth Regulation.—In cases for correction, where rows of the permanent teeth have been extracted by dentists, there is not a single one that helped the case one iota; on the contrary, the cases were so mutilated that perfect results could not be obtained unless the extracted teeth were replaced by prosthetic means.—T. J. BRADFORD, *Dental Summary*.

Diagnosis in Cases of Retained Deciduous or Unerupted Teeth.—Sciagraphy is of the utmost benefit in these cases, as by this method positive diagnosis can be made and absolutely scientific treatment take the place of what would, without it, be pure guess-work.—C. EDMUND KELS, JR., *Items of Interest*.

Regulating Plates.—In the construction of regulating plates covering the bicuspid and molars, the masticating surface should be made as effective as possible. A comfortable bite is obtained by closing the opposing teeth into the waxed-up plate; then cover with tinfoil and close the teeth again to press the foil into the bite-marks, and flask. The bite-marks can be roughened with an engine bur.—E. A. COUNCELL, *British Dental Journal*.

Extraction vs. Expansion.—Nature intends the full number of thirty-two teeth to be present in every mouth. Extraction interferes with nature's wise plans and nearly always makes a perfect result impossible. Expansion of the dental arch is very much easier to accomplish than any proceeding in which extraction plays a part. Therefore expand; don't extract.—*Western Dental Journal*.

Prevention in Orthodontia.—Treatment at an early age, such as about the time of the eruption of the first permanent molars, or even earlier in some cases, is largely preventive, a short painless operation being necessary to correct a developing malocclusion, thus preventing a more severe one by such early and timely interference.—H. A. PULLEN, *Items of Interest*.

Jumping the Bite.—When the lower molar is behind the upper the irregularity can never be reduced until the bite is jumped so as to allow the upper molar to strike behind the lower. By placing anything on the upper tooth that will make an incline the patient cannot thrust the jaw back, and will thus be compelled to keep it in its true position.—EBEN M. FLAGG, *Items of Interest*.

Retention after Regulation of Widely Separated Central Incisors.—After drawing them together I drill a hole in each tooth just in front of the cingulum and make a little staple that just reaches into the holes, hooking it in so that the spring of the teeth holds it. Fill with amalgam. Teeth so held have remained in position.—THOS. FILLERBROWN.

The Brass-wire Ligature in Orthodontia.—The springing backward and forward of a tooth during its movement into correct alignment is the source of nearly all the pain and soreness experienced in regulating. With the wire ligature the relinquishment of pressure is but rarely necessary, while with fibrous ligatures each renewal necessitates the release of the tooth and consequent inevitable irritation.—EDW. H. ANGLE, *Dental Cosmos*.

Models in Orthodontia.—A good set of models is the first step in attempting to treat any case of malocclusion. They should be in pairs, even should the malocclusion be confined to a single tooth in one jaw. We cannot study a case thoroughly from the mouth only. Models give us cues to the causes as well as methods of treatment, and we cannot err seriously if we have good models to study at leisure.—DR. WATSON, *Dental Register*.

Retention of First Permanent Molars.—When those teeth are extracted before the eruption of the second molars, the mouth will not open so fully, and all the other teeth will be liable to suffer with pyorrhœa alveolaris. The two points gained by the retention of these teeth until the second molars are erupted are elongation of the bite and symmetrical facial expression.—C. C. HARRIS, *Dental Cosmos*.

Orthodontia as a Training School.—It seems to me that those who decide *not to bother* with regulating cases deprive themselves of the advantages of one of the best training schools, in which patience, quick thought and a readiness for emergencies are taught more effectually than by any other department of our work.—S. E. DAVENPORT, *International Dental Journal*.

What to do with Retained Deciduous Teeth.—We should, in the absence of certain knowledge, hesitate to remove retained deciduous lateral incisors, their retention often indicating that their successors are non-existent. Retention of temporary cuspids, however, often result from impaction of the permanent teeth.—R. OTTOLENGUI, *Items of Interest*.

Massage for Contracted Arches.—For contracted arches, also for prognathous upper or lower jaws, much can be accomplished by massage, gently yet thoroughly manipulating the parts several times a day, having the nurse or mother properly instructed, thereby saving expensive and tedious regulating later in life.—CLARK R. ROWLEY, *Dental Register*.

Orthodontia: Photographs.—I would urge you to take photographs of each case. One practical reason for this is that after a long course of treatment, during which a child's features have been altered very gradually, parents are apt to forget the initial condition and fail to appreciate the magnitude of the change which has been effected. Casts do not appeal to them as does a photograph.—J. D. BABCOCK, *British Dental Journal*.

Models in Orthodontia Treatment.—A good set of models is the first step in attempting to treat any case of mal-occlusion. We cannot study a case thoroughly from the mouth only. Models give us cues to the causes as well as to methods of treatment, and we cannot err seriously if we have a good model to study at leisure.—DR. WATSON, *Dental Register*.

Orthodontia and Rhinology.—Orthodontia is becoming recognized as a necessity in nose and throat treatment. Instead of the removal of the turbinated bones to give room in the nasal tract the better way is to expand the dental arch, which will normally enlarge the nasal space and promote better breathing by purely natural means.—*Western Dental Journal*.

Regulating Plates.—Iridio-platinum is much cleaner than German silver; there is no oxidation and we do not have to take nearly as much care as with German silver. German silver is much more unclean than the rubber plate, in my hands.—R. OTTOLENGUI, *Items of Interest*.

Orthodontia: Depressing Teeth in Their Sockets.—

It is better to grind off interfering front lower teeth than to run the risk of disturbing nutrition to the pulp by compression. It does no harm whatever to grind the ends of such teeth if it is done carefully. If they are sensitive it should be done a little at a time with intervals of several weeks between.—J. N. FARRAR, *International Dental Journal*.

Early Regulation.—

If taken early, the roots of the permanent teeth are not fully formed, the alveolus is very tender and soft, and as much movement has been obtained under these conditions in three or four days or a week as could be got at sixteen or eighteen in as many months, and that, too, without danger to the dental pulp because of the ample apical foramen.—E. A. BOGUE, *British Dental Journal*.

Early Orthodontic Treatment.—

Early treatment is a necessity, not only because of the certainty of permanent retention afforded by a firm and sufficient deposit of alveolar structure after the treatment, but because the development of some of the very recurrent and even incurable forms is thus avoided.—B. E. LEISCHER, *The Dental Era*.

Age for Correction of Malocclusion.—

Just as soon as it is manifest that there will be a malocclusion, take the teeth in hand for prevention or correction. We thus assist Nature to reach the right proportion, so that the teeth may have the relative positions intended by natural laws.—T. J. BRADFORD, *Dental Summary*.

Early Regulation.—

No matter what the operation, early treatment is always advisable, the less number of permanent teeth erupted making the operation easier and shorter because of the lesser resistance to be overcome and because of the cartilaginous nature of the process at early age.—HERBERT A. PULLEN, *Items of Interest*.

The First Molar in Orthodontia.—If the first molar does not erupt normally all of the other teeth will be irregular, and it also regulates the bite. The study of all cases of malocclusion should begin with the position of this tooth, and remember that the lower arch is the most important at every stage of the work. Early attention is most important, as each day's delay makes matters worse for the patient.—EDWARD H. ANGLE, *Dental Digest*.

Time Allowance in Regulating Cases.—After we have done all that is possible in the correction of an irregularity time must be allowed for nature to grow up to the new condition. * * * * Accurate retention for a certain time is absolutely necessary.—E. A. BOGUE, *International Dental Journal*.

To Prevent Crowding and Irregularity of the Teeth.—Institute very early a system of mouth massage, instructing the mother or nurse to rub the inside of the infant's jaws systematically, but gently, thus aiding in their development, and giving more room for the teeth.—C. L. BOYD, *Dental Register*.

Cementing Bands on Conical Teeth.—Some teeth are so conical that cement will not hold regulating bands in place. To overcome this difficulty dry the tooth to be banded and paint it with a thick-setting varnish (sandarac or shellac). Then cement the band, and it will stay in place.—C. E. KLOTZ, *Dominion Dental Journal*.

Preparation of Steel for Regulating Appliances.—When formed to the desired shape, steep in chlorid of zinc and then in pure molten tin. No oxidation will then take place; its tension is improved, and it can be united to any other metal by pure tin, using the chlorid of zinc as a flux. If imbedded in vulcanite it will not cause disintegration.—D. GENESE, *Ohio Dental Journal*.

Nickel for Regulating Bands.—Can you suggest some economical substitute for German silver to be used in bands in regulating cases? A nickle rolled out to the proper thickness serves the purpose far better than German silver. It is better in color, and remains so; is somewhat stronger, and can be soldered with the greatest ease.—R. W. STARR, *Dental Brief*.

Correcting Irregularities. Why?—The true reason for correcting irregularities is that children may have a better masticatory apparatus for the comminution of food and thereby give to their descendants a better developed jaw and normally arranged teeth. Proper occlusion is the most essential requirement.—R. B. HOWELL, *Dental Register*.

Nuts in Regulating Appliances.—It is an excellent plan to taper off the end of the screw slightly, so that when the nut is taken in the tweezers it will readily slip on to the end of the screw, which is not the case when the threaded portion is cut off square.—W. MATTHEWS, *Dental Record*.

Cementing on Bands in Regulating Cases.—In putting on bands the teeth should be smeared with cement as well as the bands; this is imperatively necessary to prevent the devitalization of the teeth on which the appliances are placed. Too much care cannot be taken in regard to this.—C. F. ALLAN, *International Dental Journal*.

Impression Taking in Orthodontia.—We cannot get the models too perfect if we would secure scientific results in treatment. They should be as carefully made as though they were to adorn the niches of the most famous art galleries.—N. S. HOFF, *Dental Register*.

India Rubber Bands for Regulating, etc.—With pinchers of various numbers and a flat leaden block, you can punch out, from either thick or thin rubber-dam—according to strength required—bands which will be found more satisfactory than those cut from rubber tubing.—A. T. COUCHER, *Jour. British Association*.

Plaster Models in Orthodontia.—In fitting cribs, by the Jackson method, to the models, the plaster teeth should always be scraped a little to secure a tighter fit when the crib is finished and placed in the mouth.—C. E. KLOTZ, *Dominion Dental Journal*.

Malocclusion: Diagnosis.—The careful observer may detect irregularities in the positions of the temporary teeth that are sure indications of malpositions among the permanent teeth *that are not yet erupted*.—E. A. BOGUE, *International Dental Journal*.

When to Regulate.—It is asked: "What is really the best age to regulate, after eruption?" Just as soon as the crown can be got hold of to put an apparatus on; the *age*, of course, differs slightly with different individuals.—E. A. BOGUE, *British Dental Journal*.

Advantages of Regulation by Means of Ligatures.—They take up less room than any appliance that can be devised; they are so easy in action that a child will tolerate them; a tooth can be rotated upon its axis without disturbing its relation to other teeth.—W. J. YOUNGER.

Regulating Springs.—Gilded piano wire is most satisfactory for springs attached to regulating plates as it does not corrode, nor, in many mouths does it even tarnish; it is also exceedingly springy and is easily worked.—E. BRADNER WHITE, *Dental Review*.

Aids in Orthodontia.—The surgical severing of the fibres of the peridental membrane promises to yield results of much benefit, while the surgical removal of bone in advance of moving teeth affords a means of hastening otherwise protracted operations.—HERBERT A. PULLEN.

Cemented Bands.—Where bands are to be cemented to the teeth, the teeth should be covered with some resinous substance, to avoid the chemical action of the cement upon the enamel.—CH. WILSON, *Dental Cosmos*.

The First Permanent Molars.—Point out to parents that as the child has *twenty* fingers and toes, so also it has *twenty* deciduous teeth. They will be less likely, when the first permanent molars appear, to mistake them for deciduous teeth.—J. R. LOWE, *Western Den. Jour.*

Malocclusion: Diagnosis.—The careful observer may detect irregularities in the positions of the temporary teeth that are sure indications of malpositions among the permanent teeth *that are not yet erupted*.—E. A. BOGUE, *International Dental Journal*.

Protrusion of the Deciduous Teeth.—It is a well-known fact that very little pressure or stimulation, at the age of four or five, will accomplish more than ten times—I might say fifty times—that amount of stimulation later in life.—DR. YOUNG, *Items of Interest*.

Malocclusion: Early Treatment.—Watch the little ones and prevent growing deformities. Don't wait until the permanent teeth erupt and the mischief is done. If there is not room for erupting teeth in a too-slowly growing jaw, make room, and see how nature will help out.—VARNEY E. BARNES, *Dental Summary*.

Springy Wire for Regulating Appliances.—The gilded piano wire, size A, English gauge, is the most satisfactory wire for regulating springs, when not vulcanized in a plate, as it does not corrode, and in many mouths does not even tarnish.—E. BRADNER WHITE, *Dental Review*.

Cementing Bands in Regulating Cases.—Paint the teeth which are to be banded with shellac varnish. Wait till it dries, and then cement the band. It sticks like glue.—J. B. HODGKIN, *Dental Digest*.

To Remove Oxid from German Silver Regulating Appliances.—Hydrochloric acid, cold, full strength, may be used to remove oxid from German silver regulating appliances.—V. E. BARNES, *Dental Summary*.

In Regulating Teeth the precaution should be observed not to use too much pressure; it may cause the death of the pulp, or produce a case of acute apical pericementitis.—*Dental News*.

The Correction of Irregularities.—The “Nature Cure” for the correction of irregularities is a popular delusion. It is as pernicious as it is ignorant advice.—H. A. PULLEN, *Items of Interest*.

CHAPTER IV

(PART II)

GENERAL INFORMATION

Some Things to Remember.—While Babbitt metal has all the necessary qualities for a dental die, it must be from a proper formula, namely, copper, one part; antimony, two parts; tin, eight parts. This can be had at the dental depots. Much of the ordinary Babbitt metal of commerce has some lead, which ruins it for dental dies. Pure lead cannot be poured upon a proper Babbitt metal. The melting-point must be reduced by addition of one-sixth tin. This must not be poured hot as it comes from the heater, but stirred until it begins to attach to the sides of the ladle.—L. P. HASKELL, *Dental Brief*.

Swaging Aluminum.—In swaging aluminum, it being soft, it is apt to tear over margin of the ridge. To prevent this, cut away the portion of the counter-die which fills into the depressions or undercuts of the die. In preparing a model for moulding, take pains to flare the sides all around so it will drop readily from the mould. If it even then fails to drop, jar the edge of the flask on the margin of the moulding-box. There is never any necessity for *lifting* it from the mould. Do not use the Bailey flasks for moulding, as they are too small and bad in shape. Have a sheet-iron flask made five inches in diameter and three inches deep. For packing the sand use a potato masher, the handle around the sides, and the large end on top.—L. P. HASKELL, *Dental Brief*.

Swaging Plates.—The horn mallets should have the pointed end, which is useless, cut off about one inch and filed rounded, as that is the proper end to use, the large end being too large for the palatal surface. In swaging a gold or a platinum plate do not hesitate to slit the front and lap, because it facilitates swaging, and there is no possible objection to it. On the other hand it is a real advantage, because many a gold plate has broken through this, the weakest part of the plate, so that by cutting, lapping and soldering it is strengthened one hundred per cent. In wiring a plate or for holding two pieces of metal together, use wire clamps, about three-quarter inch long, made of ordinary iron wire, bending with flat pliers the sides close together but leaving a loop for spring. The ends may be flattened. All plates can and should be worn higher over the cuspid teeth, and the gum made fuller than elsewhere, if one desires to restore the usual depression arising from the extraction of the cuspids.—L. P. HASKELL, *Dental Brief*.

The Light About the Dental Chair.—The light at the operating chair may be very much improved in the late afternoon or on dark, hazy days by using white linen curtains as reflectors. The principal one is an ordinary roller shade fastened at the top of the window casing, the curtain to be the full width of the window and of sufficient length to allow of its being drawn out over the operating chair, above the operator's head, and attached to some fixed point in the wall or screen. The spring in the curtain fixture, if left uncaught, will be sufficient to keep the curtain taut. This curtain with its glazed white surface sloping downward and backward from the top of the window opening will direct the rays of light upon the operating field instead of permitting them to be dispersed into the room. The system of curtains may be carried much farther to a good advantage. Broad white curtains may be attached to brackets swinging at right angles to the window frame, and adjusted at an angle that will direct the light rays as desired.—FRED. C. BRUSH, *Dental Brief*.

Studding to Arrest Abrasive Process.—Studding as an operation is very simple, rapid and efficient, and the procedure is as follows: In the absence of a better set of instruments, use the instruments known as the How drill and taps, and the iridioplatinum post-metal made for the How crown system. The drills are made in three sizes, and the post wire is threaded to correspond with the drills and taps. After selecting and desensitizing the tooth to be operated upon drill and tap as many holes as required—from two in the laterals to four or six in the molars; about one-sixteenth of an inch in depth. The post wire is cut with the Clapp saws a trifle longer than the hole is deep, and with the same instrument cut a groove across end of screw to engage the driver; dip the screw in a rather soft mix of cement and run it home. After the cement is hard, trim it off flush with the surface and polish.—J. C. CURRY, *in Dental Brief*.

Consultation Among Dentists.—In all cases of doubtful diagnosis, uncertainty respecting proper treatment, or when a fatal termination is feared, the physician avails himself of the aid and counsel of his fellow practitioner. In like manner consultation should constitute an important factor in the direction of an acceptable aid to our success. Not that our opinions or our proceedings are of such a character that they involve a question of life or death; not that we are incapable in a general way of doing the best we know how under the circumstances; but that we may by thus deliberating do better than we previously knew how, and having done this we should have the frankness to admit the same. The consultation of the dentist must of necessity differ from that of the physician; it need not be a hurried consideration of symptoms and signs, followed by extreme or heroic treatment, but instead of this it may be a deliberate weighing of the facts, and this should be the primary function of most dental societies. It is chiefly at the meetings of these organizations that our consultations should take place.—I. N. BROOMELL, *Dental Brief*.

Requirements to Practice Dentistry in the Various States.—In the following States and Territories a dentist must have a diploma from a recognized dental college and also pass the State board examination: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Maine, Mississippi, Montana, New York, New Hampshire, New Jersey, New Mexico, Ohio, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, Washington, West Virginia, Wyoming. In the following States a diploma from a recognized dental college will permit one to practice dentistry without taking the board examination, but a license must be secured from the proper authorities: Kansas, Kentucky, Michigan, Missouri, Nebraska, Nevada, North Carolina, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, Utah. In the State of Wisconsin a license is granted to those who have a diploma from a dental college demanding a four-year course of seven months each. In Missouri, South Dakota and Utah a board examination is granted to any person who has served a certain number of years under a private preceptor. If the examination proves satisfactory a license is granted, the same as if the applicant possessed a college diploma. In the following States any person desiring to practice dentistry may take the board examination, and a license will be granted if the examination proves successful: Alaska, Kansas, Massachusetts, Nevada, Oklahoma, Tennessee, Texas.—*Dental Brief*.

Treatment of Infected Teeth with Simple Periostitis.—

Cleanse the canal of all *débris*, inject hydrogen peroxid, then close canal with cotton pellet. At the next sitting cleanse again and dry; insert a few fibres of cotton saturated in forty per cent. formaldehyd, or with broach pump in a drop of formol. Leave in the canal a fibre of cotton soaked in five per cent. formalin. At the next sitting insert a paste of iodoform and five per cent. formol, and fill.—L. QUINTON, *Dental Cosmos*.

Carving-wax for Crown- and Bridge-work, and Other Uses.—Take pink, base plate gutta-percha, one sheet, and one sheet of pink paraffin and wax, the same as that used for waxing base plates. Melt the wax *with dry heat* and then put the gutta-percha in and stir until the gutta-percha is melted, then pour out onto a plate and let cool. The common beeswax makes just as good a product, only the color is lighter. Be sure and *use dry heat for this*. Keep at a high temperature all the time; if it takes fire blow it out. The best vessel I find for melting it is a granite dipper with a long handle, stirring with a steel spatula until the gutta-percha is melted. This material is to take the place of modeling compound and plaster in crown, bridge and gold inlay work.—C. BOYD POWELL, *Dental Brief*.

Root Formation as Indicated by the Crown Contour.—Crown with rounded outline and small neck—roots small and curved outward from the neck and inward toward the apex—describing the segment of a circle; the larger the neck, the larger the roots, with the same general outline. Crown with square corners and small neck; roots spreading outward from neck to apex; the larger the neck the more pronounced this form of roots. A rounded contour of crown indicates a turning in of the roots. Square contour of crown, spreading roots. Where there is mechanical abrasion the tooth will, as a rule, be found to be firmly braced with strong spreading roots, holding the tooth solidly immovable and resisting the impact of mastication.—GEO. B. CLEMENT.

To Prevent Rusting of Drills.—I keep my drills in a glass cylinder in the bottom of which is placed a pledget of absorbent cotton saturated with lysol and the oil used in the Edison battery, equal parts. Bury the heads of the drills into the mass and seal up with the cork of the bottle. A pinch of sodium bicarbonate sprinkled in the mass will aid by its neutralizing effect if acids have been used in the canals.—T. J. FERNANDEZ, *Dental Cosmos*.

Examination of the Teeth.—The first step in a real examination of the teeth is to get them clean. Not only should all calcareous deposits be removed, but the teeth should have every stain and discoloration polished off if possible. In no other way can every surface be brought to view and imperfections certainly noted. One should hesitate to pronounce upon the number or extent of cavities, probable cost of operations, etc., unless first permitted to put the mouth in proper condition for an examination. It should be a rule without exception that thorough cleaning shall precede a series of operations.—GARRETT NEWKIRK, *Pacific Dental Gazette*.

To Open Bite Permanently—"Cap Fillings."—Where, for any reason, it is desirable to open the bite permanently, to avoid crowning molars with living pulps, adjust "cap fillings" as follows: Grind occlusal surfaces nearly to a plane, take impression, and strike up plate of nearly pure gold, about 32-gauge, to which solder a second plate to thicken it. Drill pin holes in the centers of the four sides of the molar plane surface, thereby avoiding the cornuæ of the pulp. Drill corresponding holes in the reinforced gold plate, to which solder platinum pins. Unite in the plate properly articulated cusps. Set with cement. By this method the approximal surfaces of the teeth are not marred, and the relation of the gums to the necks of the teeth undisturbed.—M. F. FINLEY.

A Cause of Pulp Congestion.—A condition which is not overcome or removed by any known method of pulp capping is the irregular surface in the wall of dentin enclosing the exposed pulp. The edges of the break, even should they be smooth, will act as an irritant under the constant arterial pressure, and stasis in the pulp circulation must ensue. No degree of success can attend the operation of pulp capping unless the continuity of the chamber is restored and a compatible surface left against which the pulsating pulp can rest and remain in a physiological state.—M. C. MARSHALL, *Dental Era*.

Aching Pulp in Teeth Already Filled; Prognosis.—A pulp aching and covered by a filling may be considered as a morbid tissue, and prognosis will depend upon the conditions found on removal of the filling. It is important to carefully note the first exudation from the pulp as it is uncovered. If a drop of pus should escape it shows that infection is already present, and pressure anæsthesia should not be attempted at the first sitting; instead, a dressing which will be both sedative and antiseptic in character should be applied. Usually the escape of pus and the slight hemorrhage alleviate the suffering, and with the antiseptic treatment the forcing of septic material through the apex is avoided. When there is no pus, prognosis should be favorable.—R. OTTOLENGUI, *Dental Cosmos*.

Tempering Swiss Broaches.—Place a dozen or two in a glass tube and draw the temper to a deep blue over an alcohol lamp or a Bunsen burner. The glass protects them from currents of cold air, allows them to cool slowly, and enables one to see the color of the steel.—S. G. PERRY, *International Dental Journal*.

Care of the Oral Tissues.—Of equal importance with the brushing of the teeth is the brushing and cleansing of all mucous tissues, *i. e.*, gums, tongue, cheek and lip muscles, and the palate tissue. This may be accomplished by a *stiff-bristled, flat-surface* tooth brush, with which the gums are massaged with a rotary motion, brushing the lower gums upward, and the upper gums downward, toward the necks of the teeth.—BURTON LEE THORPE, *The Medical Brief*.

Care of the Teeth During Illness.—The teeth of invalids may be treated with silver nitrate with the result of inhibiting decay for several years. After the restoration of health I have filled the cavities, and have been able to note that no progress has occurred in the decay during the period of ill health.—J. MORGAN HOWE, *International Dental Journal*.

Color in Implantation.—In all natural inlays or implanted teeth the part inserted will take on the color of the adjoining teeth or the adjoining part. That is a peculiarity in implanted teeth; but you must use a tooth, or section of tooth, of the same temperament as that upon which you are working. For instance, if a tooth is of a bilious temperament, or a nervous temperament, you want to use one of that temperament, not take the tooth of a bilious temperament for an operation upon the tooth of a nervous temperament.—*Dental Brief.*

Tooth Polisher.—Tecum fibre is a most efficient article for polishing the proximal surface of the teeth, being fine, strong, and charged by nature with grit—silex, like the cortex of a reed. It can be drawn between the most closely set teeth with the aid of a little vaselin in extreme cases; this does not seem to impair its efficiency.—DR. BROCKWAY, *International Dental Journal.*

Hypertrophied Gum Tissue.—Trichloroacetic acid applied to hypertrophied gum tissue overlying the cervical border of deep-seated cavities accomplishes three things,—viz., checks the bleeding, shrinks the tissues, and, by producing a white eschar, lights up the cavity to an appreciable extent.—G. B. SQUIRES, *Items of Interest.*

Carbonized Cotton.—This is a good quality of pure antiseptic, absorbent cotton, saturated with boric acid, placed in an iron retort, which is then slowly raised to white heat, the cotton being gradually reduced to carbon. When dry it readily crumbles and is difficult to work, but in combination with oxpara it works very satisfactorily as a canal-filling material.—A. F. STRANGE, *American Dental Journal.*

Tempering Fine Steel Instruments.—The temper can be drawn from heavy tools by direct contact with the heat, but finer instruments should be treated through some medium, and for this purpose use asbestos over gas, gasoline or alcohol flame. The finer the instrument the thicker the medium.—W. A. BROWNLEE, *Dominion Dental Journal.*

Spence Metal.—Spence metal is composed of sixty parts of sulphid of iron and forty parts of sulphur; the fusing point is 225° F. It is of great value when used as an articulating model, by minimizing the attrition of the antagonistic surfaces, which results when teeth of porcelain are brought into repeated contact with teeth of a plaster model.—*International Dental Journal*.

Importance of Regular Attention to Children's Teeth.—As the recuperative power of the dental tissues is null, and as premature extraction will bring permanent disfigurement, it is absolutely necessary that we should be able to interfere before any permanent damage is produced, and to oppose with all the means at our command those disorders which intelligent care would often prevent.—**EDMOND ROSENTHAL**, *Dental Brief*.

Relief of Facial Neuralgia.—The two nerves endowed with the greatest number of tactile nerve-endings are the fifth, supplying sensation to the antero-lateral head and face, and the median, supplying the fingers. The motor areas of these nerves in the cortex overlap, the fibres crossing in the cord. This being the case, it has been found that if the hand opposite the side of the head or face affected by neuralgia is placed in a basin of water as hot as can be borne, the impression received in the cerebral cortex dominates the impression produced by the pain, and immediate relief ensues.—**W. G. BELT**, *Medical Sentinel*.

Sharpening Instruments.—Cut discs an inch and a half in diameter from emery paper, Nos. 00 and ½, and place in alternate layers to about half an inch in thickness, upon a disc of tin slightly smaller, and fasten on a screw mandrel. On the disc of coarse paper bring the instrument to desired shape; tear off this disc and finish the sharpening on the finer grit. In this way a keen, even edge can be given to the instrument in a very short time.—**F. J. PATTERSON**, *Dental Review*.

Sodium Perborate.—The preparations of H_2O_2 , usually employed possess the disadvantage of being acid in reaction. Sodium perborate offers advantages of the highest order. It is of alkaline reaction and perfectly stable and can be preserved indefinitely even when exposed to the air or kept in unstoppered bottles. One kilogram contains 104 grains of active oxygen, which becomes available on mixing with distilled water. It may be used in solution or in powdered form, as when in contact with the tissues, inflamed or normal, a sufficient amount of humidity is always present to cause the evolution of oxygen.—*L'Odontologie*.

Hygiene of the Gums.—To have good, satisfactory, masticating teeth the gums must receive friction, through the food in eating or through rubbing in some manner to insure perfect circulation. Teeth without gums are denuded teeth, and in many cases they are useless teeth. The proper care of the gums from the personal standpoint is of as much importance as the care of the teeth themselves.—A. W. HARLAN, *Items of Interest*.

Sensitive Dentin.—Operative procedure plays a most important part. A thorough knowledge of the instrument used, perfect manipulation as well as speed, all play leading parts. To work rapidly one needs faultlessly sharp instruments; the excavator and the bur should be as carefully examined as the cavity. No obtundent will give perfect satisfaction unless these details are carefully considered.—K. J. SCHUMANN, *Items of Interest*.

Painless Operations.—When you do not wish to use cocain solutions or other drugs that are liable to be poisonous, take a pair of pointed pliers and dip in a solution of chloral-camphor and pass it gently around the root of the tooth (freed from blood and saliva), and an operation that is usually very painful will in many cases be entirely painless, in others almost so, and you have no bad-smelling drug in the mouth.—A. W. HARLAN, *Den. Review*.

The Sense of Touch.—In certain operations the highest development of the sense of touch is not only important but *vital* as well. For instance, in the treatment of pyorrhœa alveolaris, the removal of minute, deep-seated deposits which cannot be seen must precede the cure. The sense of touch is here as important as the sense of sight to the porcelain worker. In this treatment the other senses are secondary to the sense of touch, which is absolutely mental in its highest form.—H. C. SPENCER, *Dental Cosmos*.

"Dental Odors."—Iodoform, carbolic acid, creosote, oil of cassia or of cloves, and other highly volatile substances add to the office, in many sensitive patients, more repugnance than they already have from fear. Spraying the entire breadth and length of the operating-room, fumigating, so to speak, with a weak solution of spirits of lavender, disguises these odors admirably by the aid of compressed air, and makes the room smell sweet and fresh.—GEO. ZEDERBAUM, *Dental Register*.

Treatment of the Patient.—The dentist is too apt to centre attention on the tooth, regarding the patient as a rather tiresome appendage, a necessary nuisance. All treatment should be planned with due regard to the age, state of health, and power of endurance of the patient, and carried through with the infliction of the least possible amount of discomfort or distress.—J. H. BABCOCK, *Dental Record*.

Quick Separation Contraindicated in Teeth to be Filled with Amalgam.—When amalgam is used quick wedging is contraindicated in any but small fillings. Unless the teeth are kept apart sufficiently long to overcome the tendency to immediately resume their normal position, any contouring will be destroyed; possibly, indeed, the filling may be broken up and disintegrated by the teeth springing together as soon as the wedge is removed.—D. LINLEY PALMER, *Dental Brief*.

Choice of Filling Material.—In deciding upon the filling material for filling a given cavity, there should be taken into consideration the size, depth and location of the cavity, the structure of the tooth, the supporting tissues, and the actual physical condition of the patient, and let the selection be based upon logic.—C. N. THOMPSON, *American Dental Journal*.

Mouth Breathing.—Mouth breathing is a very potent and common contributory cause of phthisis, and in many cases this pernicious habit is formed as the result of carious teeth in early life. The child is afraid to close its jaws, and not only acquires the habit of bolting its food, but also, to avoid possible painful contact of the teeth, keeps them open sufficiently to part the lips, and commences to breathe through the aperture thus formed.—F. LAWSON DODD, *British Journal of Dental Science*.

Adhesion of Cements.—The matter of extreme dryness of dentin surface is over-emphasized as a preparation for cementing an inlay. After thorough cleansing of extraneous substances, such as mucus, etc., we should then thoroughly moisten the surface with the liquid of the cement we are about to use, or possibly better, some plain syrupy phosphoric acid, securing the displacement of oil in all inequalities of the surface, removing all possible surplus by air blast or absorbents. Success depends on having no excess of liquid.—W. V. B. AMES, *Dental Hints*.

Action of Arsenic on Soft Tissues—Antidote.—In the tincture of iodine we have an antidote of which the action is so certain and prompt in arresting inflammation and ulceration, caused by the accidental contact of arsenic tri-oxid with the gums and cheek, that I regard it almost as a specific. If those who use arsenic estimate at their full value the terrible ravages that may be caused by it, and know how easily they may be arrested, it is inexcusable, if not criminal, to permit a case to go on to necrosis of the bony structure.—A. N. DICK, *Pacific Med. Den. Gazette*.

Death from Alveolar Abscess.—When not caused directly from extraordinarily high temperature, death from alveolar abscess is due to septicemia—the direct result of poisoning of the general system by products absorbed from the area of suppuration. Deaths from this cause should be reported in our dental journals.—G. V. BLACK, *Northwestern Dental Journal*.

Tooth-massage.—It is to my mind a question whether it is advisable by excessive use of pumice to rub away the enamel cuticle at points of the tooth which are susceptible to decay as I have found that the destruction of this membrane involves an increase of susceptibility of the tooth to decay.—W. D. MILLER, *British Dental Journal*.

Difficult Eruption of Third Molars.—Prompt excision of the entire hood of gum tissue is called for. The resection of the gum should be so thorough as to completely expose the four sides of the tooth; the blood-letting itself is beneficial. In a large percentage of cases the tooth can be brought into proper alignment and occlusion and under such circumstances there is no valid excuse for its extraction.—M. L. RHINE, *International Dental Journal*.

Pulpless Deciduous Teeth.—For little children, when you cannot be as thorough as you would wish, I use carbolic acid and iodine in equal parts covered up indefinitely with gutta-percha. This in cases where they simply will not have anything else done.—H. N. JACKSON, *Dental Review*.

Carbolic Acid in the Treatment of Burns.—Applied to the normal tissue pure carbolic acid acts as an escharotic, but on a burned surface its escharotic action is neutralized by the albumin effusion delaying coagulation, local anesthesia of the peripheral nerves taking place. The general result is the aseptic exclusion of air and coagulation of the serum effusion, the healing process taking place with less suffering, and in a shorter time, than of any other method.—J. L. MUENCH, *Medical News*.

Clean Burs.—Burs are easily cleaned, without dulling cutting edges, by being held against a revolving wheel of soft wood such as is used for carrying pumice in polishing plates.—*Dental Hints*.

Removal of Tartar by Lactic Acid.—Acids can only be regarded as adjuvants to instrumentation. They cannot be depended upon alone to completely remove the deposit. Lactic acid has certain advantages not possessed by sulphuric acid; it is less escharotic in proper dilution and has the decided advantage of directly dissolving the calcareous salts without chemically decomposing them and forming insoluble compounds.—E. C. KIRK, *Dental Cosmos*.

The Care of Creosote.—To retain the full strength and medicinal qualities of creosote, it must be kept in a bottle of white glass, sealed with a glass stopper, and placed where it may receive the light of the sun. If kept in a dark-colored bottle, hidden away from daylight, it deteriorates.—B. J. CIGRAND, *Dental Headlight*.

Adrenalin.—The action of adrenalin in stimulating the heart and therefore in resuscitating a patient who is suffering from heart-failure under an anæsthetic is extremely valuable. In addition to the use of the other agents we have it will no doubt render the operating-table much more safe than it has been in times past.—JOSEPH HEAD, *Items of Interest*.

Care of Hypodermic Syringe.—This little instrument should never be allowed to become dry, this evidently being the cause of the annoyance which you experience. As a preventive, put a few drops of glycerin in the syringe after using it; this will keep the leather soft and will act as a lubricant to the instrument. In case you neglect to do this and the leather is dry, soften it by immersing in cold water (never in hot water for this purpose), then allow it to remain in a glycerin bath for some time.—*Dental Brief*.

To Increase the Durability of Oxyphosphate of Zinc Fillings.—Add oxid of iron, in the form of the finest rouge, to the oxid of zinc in the proportion of one part of the former to six or ten of the latter, shaking the two powders together in a test-tube. The dark red color is no objection to its use in many places.—WM. ROLLINS, *International Dental Journal*.

Alveolar Abscess in Deciduous Teeth.—One of the simplest problems we have to meet is the treatment of an abscessed deciduous tooth. Protect the mouth with bibulous paper; then fill the pulp cavity with carbolic acid, ninety-five per cent. Cover it with gutta-percha and gradually force it down into the cavity, when the carbolic acid will be forced through the canal. Apply alcohol immediately to neutralize the acid.—J. N. CROUSE.

To Prevent Rust.—Paraffin oil is the best preservative against rust. The most convenient way of applying it is to dissolve one part of the oil in 200 parts of benzin, plunging the instruments into the solution after being thoroughly dried and warm. Allow the benzin to evaporate in a dry room.—*Medical Standard*.

Death from Alveolar Abscess.—A young man, who had always been delicate, complained of toothache and it was found that an abscess had formed in the jaw. This was lanced and morphia was injected, but the young man suddenly collapsed and later on died. "Œdema of the glottis, due to cellulitis of the neck, consequent upon a decayed tooth," was the verdict of the Coroner's jury.—*Dental Record*.

Formalin Cement.—Mix equal parts of formalin and the phosphoric acid with which the zinc oxid is incorporated. Dawson's cement is preferable, as it is non-sticky. For filling pulp chambers after pulp amputation.—*Ohio Dental Journal*.

Removal of Gum Tissue Over Third Molar.—I use a rotary trephine knife in the engine, and it works well. The beauty of it is you not only cut, but you take your chips with you. I use a local application of guaiacol on the surface first.—W. A. PRICE, *Ohio Dental Journal*.

A Counter-irritant.—I instruct my patients to mix a little ginger, red pepper and mustard, and sprinkle a little on the fleshy part of a raisin, and then roast the raisin. This is an easy method of making a capital capsicum plaster in case of emergency. It acts like a charm generally, and is more effective than the roasted raisin by itself.—H. E. ROBERTS, *International Dental Journal*.

To Check Flow of Saliva.—In filling lower third molars, when it is found impracticable to place rubber-dam, the annoyance of excessive flow of saliva may be overcome by the administration of sulphate of atropin, $\frac{1}{2}$ gr., three-quarters of an hour before appointment. The mouth will be found dry, though not uncomfortably so.—H. ORIS LOQUE, *Southern Dental Journal*.

To Clean the Mixing Slab.—A piece of wet pumice-stone will remove cement from the mixing slab with neatness and dispatch.—GEO. M. C. BARNARD, *Dental Digest*.

Treatment of Tooth with Fungous Growth of Pulp.—Crystals of trichloroacetic acid applied to pulp and left five minutes; growth removed with sharp spoon excavator; cavity wiped with phenol-sodique, and dressing of iodine applied to stump and sealed with temporary stopping of gutta-percha. After three days iodine dressing renewed, and at the third sitting—one week from the first treatment—the balance of the pulp was removed almost painlessly. The canals were cleansed with sterilized broaches, injected with hydrogen peroxid, and a temporary dressing of iodoform and oil of cloves sealed in. The canals were filled a week later, followed by permanent filling three days after.—J. R. MARTINEZ, *International Dental Journal*.

Coloring Cements to Match the Tooth.—Use a number of highly-colored lead-pencils. To get the required shade, the pencil is passed a few strokes over the ground-glass slab; the necessary amount of liquid is then poured on the slab and thoroughly incorporated with the pigments. The powder is then added and thoroughly mixed. An absolutely white oxid of zinc powder is best to start with as a basis, tinting with blue, green, or red pencils, shading with the black lead-pencil.—M. BELCHUR, *Dental Office and Laboratory*.

Obliterated Canals.—It has been held that no danger could arise from an undisturbed "obliterated" canal, but the contrary has been my experience. I have found, within one-half of a line of the apical foramen, an open canal containing pus, showing the presence of pathological germs. * * * Is it not possible that microorganisms can move along the line of the obliterated canal down to the point where an open canal presents itself and infect it?—J. H. WOOLEY, *Dental Review*.

Recurrence of Decay.—There is seldom, if ever, a recurrence of decay about an inlay, whether porcelain or gold, where we have a thin line of cement, practically no line at all, the cement will not wash out. If the line is sufficiently large to allow of washing, with the disintegration of the cement the inlay will loosen and drop out before decay has a chance to set in, while under apparently good gold fillings decay will frequently be found going on beneath the gold.—O. L. LE CRON, *The Dental Record*.

Dental Odors.—Drug odors add to the office, in the mind of many sensitive patients, still more repugnancy than they already have from fear. It is my habit to spray a weak solution of spirits of lavender, fumigating, so to speak, the entire breadth and length of the operating room. Compressed air does this admirably; the room smells sweet and fresh and the air is by far more agreeable.—GEO. ZEDUHANNE, *Dental Digest*.

Cataphoresis—The Negative Pole.—I do not have the patient hold the negative pole in the hand, as the hand is calloused and affords great resistance to the current. I attach the negative pole to a piece of air-chamber metal, about five inches long and one-and-a-half wide, covered with linen cloth and cotton, and placed around the neck of the patient.—S. L. STRICKLAND, *Pacific Stom. Gazette*.

Salivation.—Potassium chlorate, 55 per cent., is better for the mouth where mercury has been used than anything I know. It counteracts the action of germs, will heal up ulcerations and prevent salivation. We meet this condition right along, and possibly 50 per cent. of the dentists treat it as pyorrhea.—I. M. ROSENTHAL, *Dental Summary*.

Sodium Dioxid.—Sodium dioxid is chiefly employed in dentistry as a bleaching agent, but will, through its alkaline and caustic properties, obtund sensitive dentin. The only safe way to use sodium dioxid for either purpose is to make a saturated solution in water, as much heat is generated, sometimes accompanied by ignition, when the dry powder is brought in contact with moisture in a tooth.—*Dental Brief*.

Aluminum as a Whetting Agent.—Though a metal, aluminum possesses the structure of a fine stone, has a strong dissolving power, and develops upon use for honing an exceedingly fine metal-setting substance of greasy feel, while showing great adhesion to steel. Knives, etc., treated with it quickly obtain such a fine razor-like edge that even the best whetstone cannot produce a like result.—*Medical Times*.

The Essential Oils.—The application of the essential oils should be preceded by thorough dehydration of the hard dental tissues by means of alcohol and warm air, but the use of heat after the oils have been carried into the tooth is not only useless, but is detrimental, as the effect of the application is diminished in proportion to the amount volatilized.—JULIO ENDELMAN, *Dental Cosmos*.

Cataphoresis—The Negative Electrode.—I do not put the negative on the wrist, but place it in the mouth. It is made of a copper ball placed under the rubber-dam. To hold the electrodes in the mouth, I use an apparatus something like the gag used when giving gas. It is placed within the jaws and has a universal motion, so that the positive electrodes can be placed wherever desired.—DR. ELLIOTT, *International Dental Journal*.

To Clean Smooth-surfaced Instruments.—Score a block of soft pine to the depth of three-eighths of an inch and fill the cuts with fine pumice in one-half and chalk, rotten stone or rouge in the other half. Force tarnished or coated instruments into one of the cuts, and hone back and forth until the extraneous matter is removed. Reserve one portion of the cuts for instruments and for gold work.—*Dental Office and Laboratory*.

Green Stain.—Green stain, so commonly occurring upon children's teeth, disintegrates the tooth-structure and should be removed. This can be easily done with a rubber disc and pumice, moistened with hydrogen'dioxid.—G. P. MENDELL, *Dental Review*.

Tooth Preservation.—If a tooth is filled with cement and the surface protected with a thin layer of gold, we have a filling which will preserve the tooth better than any other; there will be no yellow showing through thin enamel walls, no thermal changes affecting the pulp; it will not disintegrate by means of the acids of the mouth, but will form a water-tight plug and keep its shape with an edge as perfect as any filling yet devised.—C. E. BROWN, *The Dental Record*.

Steel Instruments.—Medicaments injurious to steel instruments may be carried to place in root-canals on absorbent cotton and pressed up with a sharpened wood toothpick which has been soaked in cassia, which renders it elastic.—S. J. FERNANDEZ, *Dental Cosmos*.

Bleaching Stained Enamel of Live Teeth.—Isolate with rubber-dam and thoroughly desiccate the tooth. Apply over the stain cotton soaked in pyrozone (twenty-five per cent. solution) and drive pyrozone steam into the enamel by the application to the cotton of a broad, flat, hot instrument, until the enamel is thoroughly infiltrated. Nascent oxygen being let loose within the enamel itself, a distinct whitening is perceptible. The most troublesome stains are encountered between the ages of twenty-five and forty, when the hot instrument can be used with comparative ease.—JOSEPH HEAD, *Items of Interest*.

The Saliva.—It is a fact worth noting that each healthy individual's saliva is not dangerous to himself, even in wounds elsewhere than in the mouth, though this secretion would be perilous to another individual. Probably the reason for this is a continual inoculation.—R. H. M. DAWBARN, *International Dental Journal*.

Cocain and its Antidote.—A successful antidote must antagonize the paralyzing effect of cocain upon the heart, blood-vessels, respiration, etc. It should comprise in its physiological action the merits of digitalis or strophanthus, belladonna, ergot, calabar bean, etc. In its effects upon the circulation and respiration, volasem, which is an extract of violet, resembles the principal action of these drugs. Its effect is manifested so quickly and surely that, with it, any required strength and amount of cocain can be safely used.—G. LENOX CURTIS, *Dominion Dental Journal*.

Capsicum Bags.—Capsicum bags should be made with one side of rubber, to protect the cheek; the other of muslin, to permit the fluids of the mouth to enter, dissolve, and act on the tissues covering the root or roots of the teeth against which the muslin side of the bag is placed. The so-called capsicum plasters sold by drug stores are not very strong, and are really worthless for the purpose of counter-irritation.—LEO GREENBAUM, *International Dental Journal*.

A Reinforced Wedge.—This form of wedge is particularly applicable for cases wherein it becomes necessary to wedge across wide spaces, as in regaining the space of a missing tooth. It consists of the usual piece of cotton-wood which has been compressed with the pliers or vise and carved to the desired size and shape. Through the wedge thus prepared a hole is drilled, and into it is threaded and compressed a large piece of ordinary separating rubber. The principle of it is, that after the wood has expanded to its limit it will relieve the pressure on the rubber, which will attempt to resume its original shape, thus forcing the sides of the wedge farther apart.—FREDERICK CROSBY BRUSH, *Dental Brief*.

Protection of Soft Tissues when Applying Arsenic.—In all cases requiring the application of arsenic protect the gum by isolating the tooth, using the rubber-dam whenever possible, and the next best material in its stead in cases when the rubber cannot be used—which cases are very few. My choice of the other materials is in the following order: Absorbent rolls, small antiseptic doilies, or a small pad of bibulous paper, held in place on the buccal and lingual surfaces of the gum close to the neck of the tooth with firm pressure by the thumb and fingers of the left hand; and everything being ready this need not be removed until the operation is complete.—FREDERICK I. BARTLETT, *Dental Brief*.

Bleaching with Sodium Dioxid.—Adjust dam, place platinum about the tooth, and with warmed white gutta-percha form a pocket about the cavity, and with small gold or platinum spoon place sodium dioxid powder in the cavity, forcing it down with a glass instrument. Drop distilled water upon it and cover with a platinum ribbon, forcing the generated oxygen into the dentin. Repeat if necessary. Burnish a paste of precipitate calcium phosphate and distilled water into the lower third of the root and against all exposed dentin. Use light-colored cement as basis for the filling.—J. P. BUCKLEY, *Dental Review*.

Painful Eruption of Third Molars.—In the treatment of gingival and buccal inflammation due to the pathologic eruption of the third molar, the careful application of Nordhausen sulphuric acid decreases the pain and reduces the inflammation, and is easier to carry out than the customary deep lancing of the overlying gum flap. Observe strictly the precautions usual with caustic agents within the mouth. Its action should be limited to a definite area.—PIERRE ROBIN, *La Revue de Stomatologie*.

Caries or Necrosis.—There is a distinct differentiation between caries and necrosis, and when necrosis has ensued no operation should be made until a line of demarcation has established itself. In other words, no surgical interference with the part should be made until the line of demarcation has made it safe. In case of caries it is quite a different thing. We can use our curette or bur and remove the carious bone without hesitation.—C. E. BENTLEY, *Dental Review*.

Tempering Steel Tools.—Two cold-chisels, heated to a cherry-red and tempered—the one in a solution of carbolic acid and the other in water—were set to work on extra hard wrought iron. It was found that the one tempered in water became notched after a short time, while the one tempered in carbolic acid remained perfectly intact.—M. LEVAT, *The Engineer*.

Dental Decay.—Miller says there are four ways in which we can counteract or limit the ravages of dental decay. First, by hygienic measures to secure the best possible development of teeth; second, by repeated, though systematic, cleansing of the oral cavity and the teeth; third, by prohibiting or limiting the consumption of such food and luxuries as rapidly undergo acid fermentation; fourth, by the proper and intelligent use of antiseptics to destroy the bacteria, or at least to limit their number and activity.—H. C. REGISTER, *Items of Interest*.

Broken Broach in Root-canal.—Make no effort to remove it by instrumentation, but at once fill the canal with sulphuric acid (50 per cent. solution), and fill the crown cavity or pulp chamber with sodium bicarbonate solution. As the alkali makes its way rootward successive explosions of carbonic acid gas will occur, and eventually gas will be formed beyond the broken broach, and the latter will come up into the crown cavity in a boiling, frothy mass of matter.—J. R. CALLAHAN, *Indiana Dental Journal*.

Remote Results of Diseased Deciduous Teeth.—M. Parinaud has shown that very slight dental lesions, especially at the age when the deciduous teeth are being lost, may be the starting point of osseous and periosteal disease of the lower border of the orbit, and of fistulas in the region of the lachrymal duct and the lower eyelid; also of periostitis of the nasal canal. Intimate relations exist between the canine tooth and the orbital and lachrymal regions.—ALPH. PICKIN, *La Monde Dentaire*.

Nitrate of Silver Fibre.—Soak long-fibre absorbent cotton in a saturated solution of nitrate of silver. Allow the water to evaporate and repeat the soaking twice. When dry it is ready for use, in a convenient form for applying underneath the gum margin or in pyorrhœa pockets. A small pellet may be placed in a shallow cavity to arrest decay, etc.—JOHN I. HART, *Dental Digest*.

Cataphoresis—In Bleaching.—The discolored tooth was a great disfigurement. I found the canal putrescent, treated it and filled the upper portion with gutta-percha. I used 25 per cent. pyrozone in the pulp cavity and applied the positive electrode. The patient could feel a little tingling sensation about the apex of the root. In ten minutes the patient had turned on twelve volts. In a few moments I could see the tooth turning white. In twenty minutes the discoloration was entirely removed.—F. L. PLATT, *Pacific Stom. Gazette*.

Painless Operations.—From the patient's standpoint, painless operations may mean larger fees to pay, but not in such proportion as to make them less desirable. They may contribute to his good health, more comfort, more nerve strength, more happiness and more durable work. From the dentist's standpoint, it will be so profitable in every way that, almost without exception, he would leave the practice of dentistry rather than return to his former, more painful methods.—W. A. PRICE, *Dentists' Magazine*.

Bleaching Teeth—Cataphoresis.—So far we have all been bleaching with pyrozone, with "the cart before the horse." We have made use of the positive electrode in the tooth. Experiment has demonstrated that the negative electrode should be substituted. This is in accord with the law of electrical osmosis—the electrically disrupted free oxygen of the pyrozone, being electro-negative, will seek the positive pole.—F. W. Low, *Dental Cosmos*.

Gutta-percha as a Filling Material.—Gutta-percha makes a foul-smelling filling and is the worst of any to finish up, but there is no doubt in my mind but that it is the best preservative of any of the filling materials used to-day. An old gutta-percha filling smells bad and looks bad, but it saves the tooth structure.—CHAS. H. GERRISH, *Dental Cosmos*.

Massage of the Gums.—In inflammation of the gums, and other disturbed circulation about the gingivæ, massage with the ball of the finger will be found very useful. It presses the blood out of the distended capillaries, hurries the circulation in the sluggish blood-vessels, gives tone to the whole local territory, reestablishing the nutrient currents and promoting resolution in inflammation.—W. E. BARRETT, *Dental Weekly*.

Aid to the Saliva Ejector.—A small piece of wet, anti-septic gauze placed over end of the saliva ejector will prevent the tissues from being drawn in.—E. C. KROECK, *Dental Brief*.

"Dry Socket."—In a case of extreme pain in the face and in the teeth of both maxillæ resembling pulp irritation, following extraction of a third molar, examination two days later showed the alveolus from which the tooth had been removed to be devoid of normal coagulum and the bone bare. The socket was filled with a stiff dough-like paste made of orthoform combined with oil of sesame and glycerin. This gave nearly immediate relief.—*International Dental Journal*.

To Preserve Rubber-dam.—Fill a Mason jar with pure (boiled) water, adding a few drops of an antiseptic. Immerse a loose roll of rubber-dam, in an upright position, shaking all the air out from between the folds before screwing on the top. Have it full to overflowing to exclude all air. For use, cut off the desired amount, dry and rub down with talcum powder.—A. P. TSCHERNER, *Dental Era*.

Separating Rubber as a Wedge for the Matrix.—By putting a little vaselin on the rubber it can be stretched out and slipped between the matrix and the adjacent tooth, forcing the matrix to place along the cervical margin, yet yielding enough to allow the filling material to cover the margin at that point and still spread the teeth enough to allow you to give the natural contour.—C. J. SOWLE, *Dental Digest*.

Cement Limitations.—No manufacturer knows how to make a cement for the dentist who doesn't know how to mix it, and won't learn. As the worst bread may be made from the best flour, so an inferior cement may be made from the best materials. You must select the best cement and you must mix it right.—*Dental Brief*.

A Very Dense Cement.—Dr. Dunn, Sr. (Florence, Italy), incorporates a small amount of porcelain dust (pounding old porcelain teeth fine) with cement. Makes a very dense filling, with a hard, flint-like surface, especially useful on masticating surfaces.—*Am. Den. Weekly*.

Silver Nitrate: Caution.—The use of silver nitrate in the mouth requires caution. In case of accident its action upon soft tissue can be almost instantaneously checked by promptly applying sodium chlorid, thus forming the insoluble silver chlorid. Extemporaneously, nitrate of silver may be prepared by dipping a silver wire into nitric acid and thus applying it to the tissues.—HERMANN PRINZ, *Dental Digest*.

Mercurial Poisoning a Warning.—Dentists are frequently in the habit of shaking the expressed mercury from freshly mixed amalgam upon the office floor. These little globules of mercury will roll under the adjacent furniture or become lodged in the folds of the carpet and the curtains, and their evaporation may bring about a local mercurial poisoning.—HERMANN PRINZ, *Dental Era*.

To Remove Gutta-percha Points from Root-canals.—Roughen the point of an Evans root-canal dryer; heat the bulb and pass the point slowly into the canal. Cool the bulb with a wet sponge, and on removing the point the gutta-percha will come with it.—R. B. GENTLE, *Indiana Dental Journal*.

Prevention of X-Ray Burns.—A sheet of aluminum, if grounded and placed between the tube and the patient, will prevent the burn, while interfering in no way with the X-Ray phenomena.—C. L. LEONARD, *Journal Am. Med. Association*.

Oxalic Acid for Bleaching.—A strong solution of oxalic acid introduced in a cavity and the use of a hot air-syringe will bleach a tooth as quickly as any other agent. To take away the effect of the acid use carbonate of potassium afterward.—DR. LICHÉL, *Stomatological Gazette*.

Antidote for Chloroform Poisoning.—Dilute hydrocyanic acid is the quickest and most efficient antidote to chloroform poisoning. A full dose should be dropped from a drop-tube on the back of the tongue.—*Journal of Medicine*.

Uninflammable Celluloid.—If two solutions—one of one part ordinary celluloid in ten parts of acetone—the other of two parts powdered chlorid of magnesium in six parts of alcohol—are made each into a paste, and then carefully mixed and dried, an uninflammable celluloid is obtained.—*Chemist and Druggist*.

Peridental Abscesses.—Many peridental abscesses, following la grippe with antral inflammation, which will not yield to ordinary treatment, will succumb to electricity, the positive pole being applied over the Gasserian ganglion, the negative pole being held in the hand of the patient.—R. H. HOFHEINZ, *Dental Cosmos*.

Acute Inflammation of the Peridental Membrane.—Being assured that the apex of the root is open, or filled only with moisture, in all cases even before the formation of pus, place in the pulp chamber a piece of solidified formaldehyd the size of a pin head and seal in; relief will come immediately or within a few hours, all causes of congestion being completely killed.—F. B. LAWRENCE, *Western Dental Journal*.

Odontalgia.—A good remedy for odontalgia is chloretone dissolved in oil of cloves. Twenty-five per cent. of chloretone will make about a saturated solution. The well-known sedative effect of oil of cloves, combined with the local anæsthetic and antiseptic action of chloretone, makes this combination particularly effective.—C. H. OAKMAN, *Dental Review*.

Glycerin and Rosewater.—A bottle of glycerin diluted to half strength with rosewater should be kept on hand constantly. Applied to the patient's lips before operating it overcomes any tendency to become sore. Smearred over the holes in rubber-dam it facilitates passage between the teeth and is much less objectionable than soap or vaselin.—*Dental Review*.

Painful Erupting Third Molars.—Eucalyptol and aristol paste packed under the inflamed tissue over an erupting third molar will be found beneficial. Hot carbolized water thrown upon the inflamed tissue before applying the paste will often cause a cessation of the pain.—A. H. PECK, *Dental Review*.

Value of Old Rubber.—Old rubber dam is worth ten to twenty cents a pound; old bicycle tires are worth from six to eight cents a pound; old rubber shoes ten cents a pound. Old rubber tubing that has hardened from oxidation is worth nothing.—ALEX. MACPHERSON, *Dominion Dental Journal*.

Hemorrhage.—Calcium chlorid, in doses of from eight to sixteen grains, every two to four hours, should be tried in all forms of persistent hemorrhage, especially hemoptysis, hematuria, etc. This salt increases the coagulability of the blood, but if used more than three days consecutively it has the opposite effect.—*Medical Brief*.

The Tooth-pick.—Whether the use of the tooth-pick is vulgar or not depends on the manner of its use. It has a valuable function and should not be banished from proper use. It is a valuable aid in dislodging impacted food which might injuriously affect the gums, or if left, undergo decomposition, resulting in offensive odors and dangerous chemical reagents.—*Dental Register*.

A Simple Protector for the Hot-air Syringe.—The metal portion or end of the syringe may be covered with a piece of white rubber tubing of the same diameter; the tubing to be about an inch shorter than the metal end. When in use, the tubing is to be drawn up on the metal toward the bulb, exposing the tip for heating; after which the tubing is pushed out so as to cover the point, thus confining the heat and, being a non-conductor, effectually preventing the burning of the lips or mucous tissue.—FREDERICK CROSBY BRUSH, *Dental Brief*.

Removal of Scar from an Old Abscess.—The simplest way is to dissect off the tissue from where it is artificially attached to the bone and pack it away with gauze, holding the scar tissue out a little more than level with the surrounding parts until healing occurs. Massaging the part and occasionally using the electric battery will aid in the removal.—*Dental Digest*.

Saws for the Dental Engine.—Very good saws can be obtained by attaching rachets from old watches to the end of engine points. They are of the highest tempered steel, with saw edges and well sharpened, of various sizes and thicknesses. Any jeweler can afford to furnish them mounted for about ten cents each.—J. C. SCHULLER, *Items of Interest*.

Excessive Flow of Saliva.—In case of excessive flow of saliva (especially when the operation is to be upon a lower molar) prescribe a dose of atropin sulphate (1-120 grain) three-quarters of an hour before the appointment. This salt of atropin has a much better effect on the secretion than the ordinary alkaloid.—H. OTIS LOGUE, *Stomatologist*.

Bleaching a Tooth.—Clean and dry the cavity. Then wet carefully with distilled boiled water. With a white-pine stick whittled to a long slender point carry dry peroxid of sodium powder into the cavity, feeding it in until the interior gets frothy. Keep it up until the tooth is bleached, say thirty minutes. Wash out with carbonate of soda one to one hundred, and pack with calcium phosphate (Bulkely), using distilled water to make a paste. Fill with cement and cover with gold.—*Dental Review*.

Chloro-percha and Cotton.—A few of the uses found for chlora-percha and cotton: to retain medicated applications and exclude moisture in the treatment of odontalgia; to wedge the teeth; to force the gum back; to assist in retaining clamps in position.—C. O. HOOD, *Dominion Dental Journal*.

The Gums; Clinical Diagnosis.—A dull purple red, commencing one-fourth inch from the gum margin and running into the cheek, can usually be removed by thoroughly cleansing the teeth and massaging the gums frequently; but if this treatment fails, we may be sure there is, or will be, exostosis, especially when there are neuralgic pains in the temples, connecting back to the teeth.—LEVI C. TAYLOR, *Dental Cosmos*.

The Disintegration of Cement Fillings.—The principal cause of the failure of cement fillings is the dissolving away of the cement under the free margin of the gum, possibly due to acids or alkaloids formed by bacterial fermentation of enclosed food-stuff. Keep the mouth clean, wash out as much as possible all bacteria and unused food-stuff, and then our teeth and our cement fillings will last longer.—J. E. HINKINS, *Dental Cosmos*.

Escape of Arsenic from Cavity.—To prevent escape of arsenic from cavity, cut a small disc of medium stiff paper; coat one side lightly with sandaric varnish and apply the coated side directly on the drug. By smoothing the edges carefully it effectively seals the cavity and lessens liability of pressure on the pulp.—A. L. BLACKBURN, *Ohio Dental Journal*.

Tincture of Benzoin in Dental Practice.—If from any cause the process has been exposed, pain can be instantly relieved by covering the exposure with a pellet of cotton saturated with tincture of benzoin. The application is also valuable in relieving painful eruption of third molars.—G. A. KENNEDY, *Ohio Dental Journal*.

Zinc Oxyphosphate a Preserver of Pulp Vitality.—In large simple cavities on the buccal or occlusal surfaces of the molars, it is my belief that the vitality of the tooth is more surely conserved by filling the cavity at least two-thirds full of oxyphosphate of zinc cement, prior to the insertion of gold or amalgam.—WM. DWIGHT TRACY, *Dental Brief*.

"Boxings."—Instead of making porcelain inlays, gold inlays, or immense gold fillings, Dr. George Allan makes a light hollow "box" of very thin gold, fitting the cavity as accurately as possible, perforated at the bottom with many small holes and filled with oxyphosphate, which also cements the "box" into place.—*Dental Review*.

Shrinkage of Chloro-percha.—Chloro-percha should be supplanted by a mixture of gutta-percha and eucalyptus; the solution is easily made, and with the aid of a little heat is always ready for use. It is a splendid lubricant and anti-septic.—G. L. BUSH, *Dominion Dental Journal*.

Cleaning and Renewing Corundum Points and Wheels.—Soak in a saturated solution of washing-soda, but not more than three or four hours, or the shellac will soften. A bath of warm water will then bring back their cutting surface equal to new.—*Journal of the British Dental Association*.

Making Drills and Taps.—In making taps for the purpose of making nuts, after the thread is cut in the previously annealed wire, the end is filed in three-sided fashion, thus giving a better cutting point than the customary four-sided one.—C. E. KLOTZ, *Dominion Dental Journal*.

The Odor of Rubber-dam.—To overcome the disagreeable odor of rubber-dam sponge it with warm water, dry, and dust with slightly scented borated talcum powder.—*Stomatologist*.

Inlays for Pulpless Teeth.—If a pulpless tooth has an inlay and the tooth becomes dark, bleach the tooth, leaving the inlay in place.—DR. HUGO FRANZ, *Dental Review*.

Pad for Gold-foil, Pellets, etc.—A piece of velvet is much better than chamois skin for spreading gold-foil and pellets on. It will not absorb moisture in damp weather, and the gold is much easier picked up with the plugger.—*Dental Hints*.

Malignant Disease of the Maxilla; Early Diagnosis.—

A simple test, which has in a number of instances given me early warning, is found in the power which malignant growths sometimes manifest, of decalcifying for a considerable distance the otherwise seemingly healthy bone which surrounds them and upon, or in which, they are growing.—R. H. M. DAWBARN.

To Clean Rusty Instruments.—Fill a suitable vessel with a saturated solution of stannous chlorid (chlorid of tin) in distilled water. Immerse the rusty instruments and let remain in the solution over night. Rub dry with chamois after rinsing in running water, and they will be of a bright silvery whiteness.—*Dental Digest*.

Mouth-breathing.—Mouth-breathing may be largely counteracted by the development of the muscles of mastication, which, in the time of sleep, will keep the jaws closed, while weak muscles, which are never used in mastication, constantly relax during sleep and the mouth is bound to drop open.—FRED. B. NOYES, *Dental Review*.

Tooth Bleaching; Sodium Dioxid, Test for.—Sodium dioxid is easily decomposed by water with caustic soda and oxygen, and much of that procured from wholesale druggists is nothing but caustic soda. To test the quality place in a dry test-tube about fifteen grains of the powder and add from fifteen to thirty minims of water. If efficient for tooth bleaching purposes, enough oxygen should be generated to kindle a glowing splinter held in the mouth of the tube.—J. P. BUCKLEY, *Dental Review*.

The Deciduous Molars.—If thoroughly exposed the pulps will die, but probably painlessly, and the tooth may remain comfortable for some time. If the deciduous second molars can be held in place at almost any cost until the first permanent molars have come through, and are well articulated, this should be done.—C. EDMUND KELLS, *Welch's Dental Journal*.

To Prevent Deterioration of Peroxid of Hydrogen.—To prevent the gradual loss of the excess of oxygen, keep the bottle inverted in a vessel of water, keeping only a very small quantity in a small glass-stoppered vial for immediate use.—G. F. BUSH, *Dominion Dental Journal*.

Broaches of Uniform Temper.—Milliner's needles are placed, point down, in a thin metal screw-top bottle, with a few holes bored in the top to allow for expansion of air. The bottle is grasped at the top with a small pair of soldering tongs, bent to grasp it firmly, and placed bottom down over a Bunsen flame. When the right color comes the bottle is withdrawn from the flame and allowed to cool, which it will do but slowly, as glass is a poor conductor and the holes admit but a small amount of air.—H. C. MURIANE, *International Dental Journal*.

To Keep Hypodermic Needles Open.—Procure a fine steel wire, such as a fine E mandolin string, which, if necessary, can be cut down with emery paper to fit opening in the needle. After sterilizing the needle in boiling water, string it on the wire, and after running it up and down once or twice, it will leave the inner surface dry and polished.—H. A. BOYSEN, *Dental Brief*.

Chemical Test for Sodium Peroxid.—Place about one gramme sodium dioxid in a clean, dry test-tube and add one or two cubic centimetres of water. If the chemical is effervescent enough oxygen will be generated sufficient to inflame a glowing splint held at the mouth of the tube.—J. P. BUCKLEY, *Dental Review*.

A Counter-irritant.—Mix a little ginger, red pepper, and mustard, sprinkle a little of the mixture on the fleshy part of a split raisin, and roast the raisin. This is an easy method of making a capital capsicum plaster in case of emergency. It acts like a charm generally, and is more effective than the roasted raisin alone.—H. E. ROBERTS, *International Dental Journal*.

The Oil-stone.—As a lubricant, use one part glycerin and two parts alcohol. This will keep the surface clean and sharp-gritted. Oil gums up the stone.—H. W. STEELE, *Items of Interest*.

Removal of Broken Broach.—Saturate the cavity and canal with twenty-five per cent. pyrozone. In a difficult case saturate a pledget of cotton with the pyrozone and introduce it into the cavity, sealing with gutta-percha or sandarach. Leave in tooth three or four days, when the broach will be rusted and almost eaten up.—B. J. CIGRAND, *Dental Digest*.

Cataphoresis—Injurious Effects.—I cannot conceive that an intelligent use of the process can lead to ill results. There certainly seems none to be anticipated in dentin or in the pulp. I have as yet seen no instance in which I could trace an undesirable sequence as to the effect of either the current or the cocain.—H. W. GILLETT, *Dental Cosmos*.

Soldering with the Electric Furnace.—A nice way to solder a Richmond crown or a small bridge is to use a Jenkins miniature furnace; this puts the blaze on the under side of the investment, thus causing the solder to flow nicely around the facings.—F. B. WIESNER, *Dental Brief*.

Alcohol an Antidote to Carbolic Acid Burns.—Bathing the parts injured by carbolic acid affords immediate relief from pain, and the skin soon assumes a healthy color. This widens the field of usefulness of this most powerful germicide, as it enables us to use its full strength without danger of caustic effect.—H. A. KLEIN, *Journal of the American Medical Association*.

Why Fillings Fail.—After the rubber-dam is adjusted wash the tooth with alcohol. Neglect of this precaution is one reason why fillings fail, for when a piece of gold comes in contact with tooth surface which is not absolutely clean, it will not cohere.—J. W. CORMANY, *Dental Digest*.

To Remove a Pin from a Root-canal.—Bur away the cement from around the pin with a fine spear-point fissure drill, being careful not to cut the metal itself. Grasp the pin with the sharp-nosed pliers used for bending the pins of artificial teeth, and twist the pin slightly to disintegrate the cement, when the pin will come away with but little effort.—R. M. SANGER, *Items of Interest*.

The Oil Stone.—Oil stones improve with age if kept clean and well lubricated, but deteriorate if neglected and allowed to dry out any length of time. When fully saturated it is in its best condition, but if not cleaned the oil thickens and forms a coating on the surface. Kerosene oil in time hardens a stone and changes its quality; a saturated solution of caustic potash in water is preferable. Sperm oil is considered the best for edges.—B. BANNISTER, *Dental Summary*.

Gutta-percha Canal Points; Shrinkage.—Given a canal stopped at the end and water-tight, air-tight, and serum-tight, there will be no appreciable shrinkage of these solid gutta-percha points, softened enough with chloroform to allow them to slip to the apical portion of the canal.—C. L. HUNGERFORD, *Western Dental Journal*.

Tin Cement.—Tin cement is a mixture of zinc oxid and precipitated tin. Mix with any good cement liquid and use the greatest amount of powder that the liquid can be made to take up; remove from slab and work in more powder by kneading between the fingers to the consistency of thick putty. It will be very adhesive. Coat the instruments with vaselin to prevent clogging. When set it is very hard and of a dull steel color; when burnished a bright metallic lustre is produced.—F. C. BRUSH, *Items of Interest*.

To Remove the Odor of Iodoform from the Hands.—Vinegar, applied freely to the hands after they have been cleansed with soap and water, will effectually remove the odor of iodoform.—*Medical Review*.

Gum Massage.—In the treatment of pyorrhœa alveolaris direct the patient to smear the ends of two or three fingers with vaselin, to an ounce of which has been added two grains of menthol. Rub the gums surrounding the affected teeth with the finger tips thus anointed twice daily, for five minutes at a time.—GEO. F. EAMES, *International Dental Journal*.

To Check the Flow of Saliva.—A piece of ordinary absorbent cotton, twice the size of a pea, saturated in sandarac varnish and placed over the mouth of Steno's duct, with a large piece of bibulous paper to hold the cotton in position, will check the flow of saliva sufficiently to allow the treatment of superior molars or the insertion of a simple filling.—C. B. COLEMAN, *Items of Interest*.

Dental Engine Cord.—The cord used as lacing for ladies' bicycles, which can be obtained at all bicycle supply stores, is nicely woven, and can be had at about a cent a yard. It is much better and more firmly woven than the cord supplied by dental dealers, which soon wears out.—E. S. GAYLORD, in *Dental Cosmos*.

To Sharpen Hypodermic Needles.—First pass the cleansing wire through so that it will protrude at both ends. Then, with corundum wheel in engine, grind off the point of needle and the wire at the same time, then push the wire through from the other end, carrying all debris with it.—J. B. SPOONER, *Dental Digest*.

A Cheap Moldin.—The clay to be obtained from art stores, mixed with glycerin, makes a good article of moldin. It can be mixed with water, but dries out quickly and requires mixing for each time of using.—*Am. Den. Weekly*.

Pericemental Inflammation; Leeches.—Frequently after inserting a gold filling in front or side teeth with all possible precaution, thermal changes will produce inflammation. I have completely arrested the trouble by a liberal application of leeches, even after discoloration has occurred.—U. SMITH, *Pacific Dental Gazette*.

Silver Nitrate Solution.—There is no better way of keeping silver nitrate solution convenient for general use than the method suggested by Dr. McNaughton; that is, keeping a bottle nearly full of cotton saturated with a strong solution of silver nitrate, moistening pellets of cotton for use by pressing them against the saturated solution in the vial.—J. MORGAN HOWE, *Items of Interest*.

Cataphoresis Bleaching with Pyrozone.—25 per cent. pyrozone, being an ethereal solution, is a very poor conductor of the electric current. Add to it an equal amount of warm water to which has been added a grain of sulphid of zinc. Evaporate the ether by gentle heat till you no longer get the fumes. It will then be an aqueous solution and ready for use.—J. E. NYMAN, *Dental Review*.

Compressed Air.—No office is complete and up to date in every sense of the word without a compressed-air supply, hot, warm, or cold, for the operating-room, the extracting-room, and the laboratory. It will be found invaluable in preparing sensitive cavities, drying out the cavity and the field of operations, blowing out chips, cooling off modeling compound or wax impressions before removal from the mouth, the application of liquid or powder medication to parts remote from sight or reach, spraying in the treatment of pyorrhœa, etc.—GEO. ZEDUBAUM, *Dental Register*.

To Sharpen Engine Burs.—A suitable disk, mounted in the engine—preferably an electric engine—and a watchmaker's eyeglass, form all the equipment necessary, while the time taken in sharpening a bur is less than half a minute. You can sharpen all the burs used in a day, and make them absolutely sharp, in five or ten minutes. Use a ruby-gem disk about an inch in diameter, thin and cone-shaped. Hold the bur between the thumb and index finger of the left hand and rotate slowly as each blade is gone over.—W. ST. GEO. ELLIOTT, *Items of Interest*.

Protection from the Breath of Patients.—With the nominal object of preventing the breath exhaled from the nostrils of a patient from moistening the gold, cut a piece of paper to slip under the folds of the rubber-dam that covers the upper lip, and bend it in front of the nostrils to form a funnel, conducting the breath exhaled from the nostrils away from the olfactories of the operator as from the seat of operations.—A. F. MERRIMAN, JR., *Pacific Gazette*.

To Clear the Abscess Syringe Point.—Hold the metal point over an alcohol or gas flame until the mat chars the debris which caused the stoppage. Air pressure from the bulb will force it out and clear out the point.—*Am. Den. Weekly*.

Tooth Preservation.—If all gold, amalgam, and cement fillings, about which secondary caries exists, would fall out, the affected teeth would be better served than with fillings remaining hanging in undercuts and concealing the carious areas. Porcelain fillings must, on account of the way they are inserted, soon lose their hold when secondary decay penetrates the depths of the cavity; this adds greatly to the value of porcelain as a preservative filling.—ALFRED KÖRBITZ, *International Dental Journal*.

"Bad Breath."—To remove from the breath odors from whiskey, tobacco, etc., nothing is more efficient than hydrogen peroxid in five parts of rose water.—E. J. KEMPF, *Indiana Medical Journal*.

Removal of Iodin Stains.—A solution of hyposulphate of sodium will remove iodine stains from clothing or skin.—J. G. EMMERING, *Dominion Den. Journal*.

Bleeding Gums.—To obviate bleeding of the gums in crown and bridge work, apply a 25 per cent, solution pyrozone. This acts as a styptic, one or two applications rendering the gum perfectly dry for from ten to fifteen minutes.—CONRAD E. WITTLAUER, *Den. Practitioner*.

Making Matrices.—Dr. Emil Schreier recommends the use of gold-beater's skin under the gold foil to aid in carrying the matrix into deep cavities. In the absence of gold-beater's skin, which is not always readily obtainable, fine China silk answers very well, but a very sheer muslin is even better, as it can be used wet and will thus temporarily adhere to the underside of the gold.—R. OTTOLENGUI, *Items of Interest*.

To Prevent Saliva and Tooth Polishing Powders from Working Back Into the Hand-piece.—One of the cup-shaped rubber disks used for polishing purposes, removed and placed on the shank of the instrument, obviates this difficulty; a ring of wire soldered on the shank will prevent the disk from working back towards the point of the instrument.—CHAS. O. KIMBALL, *International Dental Journal*.

Formaldehyd.—Don't use the formaldehyd paste which is mixed with vaselin. When formaldehyd is in a moist state it is escharotic; also toxic, and getting it through the apex or on the gum will give trouble. When dry its caustic and toxic properties virtually cease. Use it in that form (Leininger's) and not in the tube paste form.—DR. LAWRENCE, *Preston Dental Journal*.

Restoration of Contour.—No service that I have ever performed for patients has been recompensed by such gratitude as the remedying of the evil effects of separation, thus making the patient comfortable, and in some cases restoring lost health that was apparently due entirely to lack of means of masticating the food.—J. N. CROUSE.

Annealing Gold.—The presence of moisture in the air always affects the alcohol flame because of the great affinity which alcohol has for water. An undue humidity in the operating room often results in a vitiated flame which shows a yellowish tinge. The flame from a Bunsen burner is more reliable, but it also will give variable results. An electric annealer, with machine-rolled pillets will develop a more perfect cohesion.—M. L. WARD, *Dental Digest*.

Extraction and Replantation.—There are many cases in which extracting and replanting offers the easiest, the quickest, the least painful, and the most satisfactory way to cure abscessed teeth. Immediate relief from pain is secured, inflammation rapidly subsides, all necrosed bone can be removed with absolute certainty, the canal can be filled perfectly and you have a complete guarantee that all the usual causes of abscess have been eliminated.—W. D. COWAN, *Dominion Dental Journal*.

For Fever Blisters on the Lip.—Paint with flexible collodion and salicylic acid, twelve grains to the ounce.—O. L. PEAK.

Sensitiveness of Peridental Membrane.—This is often occasioned through sensitive dentin; the tooth having been favored during mastication has become sensitive from disuse. In such cases the tooth should be filled temporarily with some plastic and the patient told to bring them into full use. After a few weeks or month malleting may be borne with ease.—WM. L. ELLERBECK, *International Dental Journal*.

Tooth Implantation.—The successful implantation of a recently extracted tooth depends mainly upon the condition of the pericementum. Extracting and immediately replanting a sound tooth, it is possible to obtain complete regeneration of the pericementum; clinically this may occur when a sound tooth is extracted by mistake and replanted without delay. Pulp restoration, though not a constant occurrence, cannot be considered within the range of impossible phenomena when the operation has been performed under strictly aseptic precautions.—MENDEL-JOSEPH AND SASSONVILLE, *L'Odontologie*.

The Saliva and the Teeth.—Dr. C. Risa has been able to confirm the views of other investigators to the effect that there is a distinct relationship between dental caries and the alkalinity of the saliva, and that a high alkaline reaction constitutes the best means of combating the development and progress of caries.—*The Lancet*.

The Care of Creosote.—To retain the full strength and medicinal qualities of creosote it must be kept in a bottle of white glass, sealed with a glass stopper, and placed where it may receive the light of the sun. If kept in a dark-colored bottle, hidden away from daylight, it deteriorates.—B. J. CIGRAND, *Dental Headlight*.

Implantation a Permanent Operation.—Natural, sound teeth, implanted for a patient under sixty years of age, will remain firm and serviceable for five years, with chances greatly in favor for lasting ten. You do not expect more from other operations; why more from implantation? Do not deprive patients of the benefit of implanted front teeth simply because they may not last a lifetime.—ROBERT E. PAYNE, *Dental Digest*.

Sterilized Water—New Five-minute Process.—Bromin added to water will kill all the pathogenic germs in it in five minutes, the addition of ammonia will neutralize the bromin. Water 100; bromin 20; potassium bromin 20 for each liter of water. Neutralize with an equal amount of 9 per cent. ammonia. The water is then perfectly clear, the taste is scarcely altered; the amount of bromin remaining is so small that it affects neither the taste nor health.—*Schaumburg Deutsche Med. Woch. (Jour. Am. Med. Ass'n)*.

Diagnosing the Presence of Pus.—The application of heat relieves pain resulting from simple acute inflammation, but has the opposite effect when suppuration is present. A valuable hint in solving the question of the presence or absence of pus.—D. K. LEWIN, *Therapeutic Gazette*.

The Hand Mallet.—To secure the greatest density in a gold filling a thirty-second of a sheet-pellet should be given forty blows with the hand mallet; a sixteenth, eighty blows; an eighth, one hundred and twenty blows of the mallet. This gives a dense filling that takes a high polish and retains it.—J. V. CONZETT, *Dental Review*.

Silver Nitrate Stains.—The silver nitrate stain is very superficial. Hard or healthy enamel will not stain; only decayed or softened enamel takes the stain. Tincture of iodine will assist in removing the stain from the teeth. This treatment, following the application with hard polishing, will make any tooth harder, whiter and brighter. Should the silver nitrate be accidentally brought into contact with the hands or face, tincture of iodine, followed with aqua ammonia, will remove it.—WM. CONRAD, *Dental Cosmos*.

Bridge-work in the Cure of Pyorrhœa Alveolaris.—The six anterior lower teeth are probably the most difficult to reproduce satisfactorily in porcelain. They are often abraded, and so stained that when they have occupied positions not in regular alignment a more pleasing result can be obtained by inserting the natural crowns, amputated from their roots, in the metal framework of a bridge.—W. V. B. AMES, *Dental Cosmos*.

To Prevent the Accumulation of Tartar.—Take a glass of water with a pinch of alum in it and rinse the mouth freely once a day. It is harmless to the teeth and keeps the gums in good condition where previously there was a heavy accumulation every month or six weeks.—C. N. PEIRCE, *International Dental Journal*.

Copper Amalgam.—It does succeed at times, and when it does succeed, it succeeds wonderfully well; no material when successfully used so thoroughly prevents decay. When it fails to arrest decay, it fails so abominably.—E. C. KIRK, *Dental Cosmos*.

Choice of Instruments.—Avoid stocking too many complicated and intricate instruments, as they are often the cause of considerable waste of time. A few well-selected instruments that you know how to use are far better than a larger number, with whose use you are unfamiliar.—H. LEONARD DORRELL, *Dental Record*.

The First Permanent Molars.—The mouth of every child should be thoroughly examined by a competent dentist before the sixth year molars make their appearance, and as soon as the crowns of these teeth are laid bare they should be washed and made perfectly clean—aseptic—and the surface covered with a good cement, so that all imperfections may be thoroughly sealed. With this treatment, and the teeth carefully watched, they will sometimes be good teeth for fifty years. If the cement washes out, renew it as often as necessary until they have passed the period of susceptibility and are immune to caries.—J. Y. CRAWFORD.

Saliva Tubes.—Saliva tubes, if of glass should be of clear glass; the only object in using colored glass is the concealment of dirt. Immersion in strong hydrochloric or sulphuric acid and subsequent rinsing will keep them bright; boiling makes glass tubes cloudy. Metal tubes should be boiled; there is no other way of dealing with them. A supply of clean tubes may be kept in a weak solution of lysoform in a covered glass dish.—J. H. BABCOCK, *British Dental Journal*.

Difficult Eruption of Third Molars.—Prompt excision of the entire hood of gum tissue is called for. The resection of the gum should be so thorough as to completely expose the four sides of the tooth; the blood-letting in itself is beneficial.—M. L. RHEIN, *International Dental Journal*.

The Tonsils.—As a station for the deposit of morbid germs the tonsil stands before any organ in the body. It is subject to direct local infection from food, liquids and air. Its projecting body and open-mouth crypts are peculiar factors for stopping all organisms from lungs or alimentary canal. * * * Nature has protected the human body against the invasion of germs by placing those great lymphatic guardians over the entrance thereto.—W. F. CHAPPELL, *Medical Record*.

Toothache.—Toothache due to pregnancy or debility should be treated with maximum doses of calcium hypophosphite.—*Medical Progress*.

Supporting a Sore Tooth While Drilling.—Instead of supporting a tooth by ligature to prevent pain while it is being drilled, take modeling compound, soften it and make a splint for both lingual and buccal sides of the teeth to support the sore tooth while drilling. This will prevent jarring, and also prevent pressure on the inflamed peridental membrane.—T. L. GILMER, *Dental Brief*.

Consideration for the Patient.—The compound tincture of aconite and iodine, applied to the gums after the removal of the rubber-dam, will serve in a measure to ameliorate that "used-up" feeling of the mouth which too frequently follows oral manipulations.—L. VAN ORDEN, *Pa. Med. Dental Gazette*.

The Teeth of Young Patients.—Gutta-percha, having the least power of conducting heat and electric currents, as, of all filling-materials yet employed, perhaps the best for proximal cavities in incisors and cuspids of young patients. Paint the whole surface of the cavity with a solution of rosin and chloroform. This serves a double purpose. It covers the surface of the sensitive dentin with a coating that protects the dentinal fibrillæ from irritation and it affords a glue or cement for fastening the gutta-percha to the walls of the cavity.—L. G. NOEL, *Dental Cosmos*.

Sodium Dioxid.—Sodium dioxid is chiefly employed in dentistry as a bleaching agent, but will, through its alkaline and caustic properties, obtund sensitive dentin. The only safe way to use sodium dioxid for either purpose is to make a saturated solution in water, as much heat is generated, sometimes accompanied by ignition, when the dry powder is brought in contact with moisture in a tooth.—*Dental Brief*.

A Substitute for Collodion.—Dr. Bullett calls attention to a new preparation that takes the place of collodion. It is a solution of celluloid in acetone. It is readily soluble, will dry in a few minutes; its adhesive quality is greater than that of collodion, but it does not become very hard.—*Ohio Dental Journal*.

The Roentgen Ray in the Diagnosis of Obscure Cases.—When the cause of disturbance cannot be found by any ordinarily careful observation, the Röntgen Ray may be of great service, as in case of hypertrophy of the cementum, impacted teeth, unerupted teeth, etc.—DR. EAMES, *International Den. Jour.*

The First Permanent Molar.—When cavities are found in the crowns of the first permanent molars, shortly after eruption, it is advisable to fill with a high-heat gutta-percha if the patient is very nervous and afraid of pain. This will often last until the patient can bear more thorough preparation of the cavity.—*Items of Interest*.

Pulp Nodules; Diagnosis.—I have noticed a good deal of change in the color of a tooth. * * * You will find when the pulp chamber is filled with secondary deposits that the tooth is badly discolored, very readily perceptible to even a casual observer.—F. N. BROWN, *Dental Review*.

What the Dentist Should Not Do.—He should never approach a patient without a clean napkin in one hand and a mouth-mirror in the other. He should never undertake an operation of filling until all salivary calculus has been removed, the teeth thoroughly cleaned, and the gums made healthy.—E. T. DARBY, *Pennsylvania Dental Journal*.

For Sore Lips.—Collodion is very useful as an application to sore lips before beginning to operate; it takes out the soreness, protects the lips, which heal rapidly after the application. Applied to wounds on the hands, it reduces the danger of infection; washing will not remove it.—W. J. HEMPHILL, *Dental Digest*.

To Prevent Odors from Medicine Bottles.—Keep bottles containing drugs with objectionable odor on a glass slab, and over each bottle invert a small glass tumbler.—T. LEDYARD SMITH, *Items of Interest*.

An Antiseptic Cement.—In mixing cement, work in a mixture of equal parts oil of cloves and carbolic acid, or equal parts guaiacol and eucalyptol. This gives a purely antiseptic filling, and is especially good for root-canal filling and setting crowns and bridge-work.—GEO. B. CLEMENT.

Prevention of Tartar.—Rinse the mouth freely once a day with water in which a pinch of alum has been dissolved. It is harmless to the teeth and keeps the gums in good condition, preventing the accumulation of tartar.—C. N. PEIRCE, *International Dental Journal*.

Hygiene in the Office.—Never use a napkin or towel about the mouth except in case of freely flowing blood, as in extracting. Use paper napkins or bibulous paper. It is nicer and more economical. Your laundry may not be as clean as it should be, or as you may think.—O. B. LOVE, *Texas Dental Journal*.

A Salve for "Cold Sores."—An excellent application for the familiar cold sore on the lips is a six per cent. solution of cocain in glycerin and camphor water.—H. C. BOENNING, M.D., *in the Stomatologist*.

To Prevent the Clouding of Mouth Mirrors.—Smear a thin layer of ordinary soap—soft but not moist—over the surface of the mirror; then polish with a dry cloth. However much the mirror may be breathed on, the surface will remain bright and clear.—GILBERT E. SEAMAN, *Journal Am. Med. Association*.

Relief of Nausea after Ether Anæsthesia.—Sipping hot water seems to be the remedy of greatest value. Also, to counteract both the nausea and the taste of ether sucking slices of lemon gives great relief.—F. H. WESTMACOTT, *Journal of the British Dental Association*.

To Prevent Moss Fibre Gold from Adhering to the Instrument.—If, in using smooth-faced pluggers, the gold sticks to the instrument, rub it on a piece of pure block tin, and the gold plating will disappear from the instrument and the gold will not adhere for some time; after a while repeat the rubbing.—HOMER ALMON, *Dental Review*.

Sensitive Dentin—Cataphoresis.—There is a class of patients for whom complete anæsthesia of the dentin is essential. It is one of the greatest surprises of our practical experience to find how man after man has given up the use of the cataphoric apparatus for this class of patients. The results are so satisfactory where I find it necessary to obtain complete anæsthesia that it is a mystery to me that men are willing to give it up for something that alleviates the pain, it is true, but that does not remove the sensation.—M. L. RHEIN, *Cosmos*.

Peridental Inflammation, Cataphoric Treatment.—To a saturated solution of potassium iodid add about one-fifth the quantity of a mixture of equal parts of the tinctures of iodine and aconite. Saturate a pledget of cotton with this mixture, and by means of the rubber-cup electrode apply to the inflamed gum. About one milliampere of a ten-cell current, continued not longer than five minutes, will reduce the inflammation, the pain quickly subsiding; there is seldom a recurrence.—J. M. FOGG, *Dental Cosmos*.

Sterilized Waxed Ligatures.—Silk thread, sizes A, B, C or D, may be sterilized and waxed on the spool by soaking in a solution of wax containing 1 per cent. formaldehyd (added in the form of paraform—nearly solid formaldehyd). Place the spools in the wax in a porcelain lined dish having a tight fitting cover, and keep in a water bath for six hours. Take the spools out, dry with sterilized towel, and place in a case in which is kept pieces of pumice stone saturated with formaldehyd.—A. C. HART, *Items of Interest*.

Diamond Burs.—Soft iron burs of various sizes, well charged with diamond dust, cut rapidly and smoothly when kept wet with water of the right temperature, and require only a light touch to do the work. Nervous patients can easily bear a diamond bur in places where the use of an ordinary bur would be impossible.—N. S. JENKINS, *Dental Cosmos*.

Normal Occlusion.—There are three points of the face that are in the circumference of a circle described by the compass with the condyle as the centre. These three points are (1) the point of the chin, (2) the tip of the nose, and (3) the frontal eminence, the condyle with the point of the chin and the frontal eminence forming an equilateral triangle.—W. O. TALBOT.

Abnormal Space Between the Superior Central Incisors.—This is frequently due to an abnormal attachment of the *frenum labii*, which will be found to be thickened, with its attachment to the gingivæ continued through between the incisors. Simply severing this ligament will sometimes be sufficient, but a deep incision with a cautery knife at white heat, splitting the cord, offers the advantages of contraction of tissue. The tissue should of course be anæsthetized before making the incision, carefully avoiding wounding the peridental membrane, operating only upon the abnormal tissue; a cleaning should precede the cautery. The teeth can then be drawn together and mechanically supported for several weeks—or, it may be, months.—E. H. ANGLE, *Dental Cosmos*.

Testing the Saliva for Acid.—If metals of a different potential on the ends of wires which are in series with the milliampèremeter are placed in the mouth, if the saliva is acid it will cause the generation of a galvanic current which will deflect the needle according to the amount of acid. If the saliva is neutral or alkaline, there will be no deflection. The amount of deflection shows the degree of acidity.—THOS. P. HINMAN, *Items of Interest*.

Inflammation of the Antrum: Diagnosis.—Fetor of the breath may lead us to suspect inflammation of the antrum; the presence of a dead tooth increases the probability of correct diagnosis. One way of confirming this consists in the injection into the root-canal of a syringe of hydrogen dioxid, which, in the presence of pus, effervesces, the foam being easily detected on blowing the nose, the peculiar noise produced by the effervescence being easily heard by the patient.—OSCAR AMOEDO, *Dental Cosmos*.

Why Pulp Die Under Metal Crowns.—This may occur under two conditions; decay occurring about the cervix through ill-fitting of the crown, or through thermal changes transmitted through a body of dentin too slight in extent to protect the pulp and this only in cases where the crown has been too liberally denuded of enamel and dentin. For this there is certainly no necessity.—S. H. GUILFORD, *Stomatologist*.

Pulpless First Molars.—A long experience and observation of these teeth and the results that follow the removal of the pulp show me that most of those teeth are lost, if not immediately, within ten or twelve years pretty certainly. The tissues of the teeth mostly break down early; the enamel will peel off from the dentin, and the whole thing go to pieces.—G. V. BLACK, *Dental Review*.

Drawing the Temper of Jewelers' Broaches.—Lay them on a piece of German silver plate, cover with pulverized pumice to prevent oxidation, and raise the plate to a red heat. Broaches which were stiff and brittle before annealing become soft and tough.—DR. HERNDON, *Pacific Dental Gazette*.

Comfort of the Patient.—In filling a large sensitive cavity with amalgam, warm the plugger or burnisher each time you use either. In finishing a gold filling run the bur before use into a bit of beeswax and coat the disk with vaselin.—F. M. SMITH, *International Dental Journal*.

Cavities Extending Below the Gum Margin.—Remove hypertrophied tissue with the lancet, and with chloropercha and cotton press the gum away and separate at the same time. The cavity can be subsequently filled with very little trouble. Without this preparatory work it will be very difficult to apply the rubber-dam to exclude moisture.—GEO. HOOD, *Dental World*.

Recession of the Gums.—When there is a tendency to recession of the gums, if the teeth are cared for properly by frequent polishing and massaging, not only will the teeth be retained but the gum will change from the whipcord edge to a thin edge hugging the tooth closely, with sufficient retraction to come nearly or quite to its normal position, especially in your patients.—L. C. TAYLOR, *Dental Cosmos*.

Formagen Paste.—The formaldehyd in this paste is said to have a peculiar action upon septic pulps, and to destroy germs in infected pulp horns. The writer's experiences, thus far, are favorable to its use in contact with softened dentin. Engenol is an ingredient in this paste. When infection is suspected, it is worthy of trial.—OTTO E. INGLIS, *Stomatologist*.

The Natural Tooth Crown.—The value of a pulpless tooth should not be estimated from the condition of the natural crown, as it, with present methods for permanent crown restoration, is the least important part of the tooth. The root and its surroundings, that upon which the permanent comfort and retention of the tooth depends, should always form the basis of judgment and diagnosis.—D. D. SMITH, *Dental Digest*.

Wood Alcohol for Annealing.—Wood alcohol may be used for annealing, but the gold should be placed on mica, and held over the flame to avoid the soot that would be deposited if the gold were passed through the flame.—B. H. TEAGUE, *Am. Den. Weekly*.

Pulp Nodules Diagnosis.—There is one sure sign, if you can see the patient when the paroxysm of pain is on, and immediately, before it passes off, tap the teeth, you will always find extreme sensitiveness in the affected tooth until the pain ceases. In a few seconds it passes off and you cannot discover that one tooth is more affected than the other.—J. N. CROUSE, *Dental Review*.

Cleansing the Fountain Spittoon.—The drain-pipe of the fountain spittoon is liable to become very offensive. To purify it, place some tablets of formaldehyd (paraform) in an open-mouth bottle filled with water. Place in a sand-bath and the water will absorb the gas until you get a forty-per cent. solution. Pour this through the spittoon and you will never have any stench from it.—F. B. LAWRENCE, *Western Dental Journal*.

Cracks in the Enamel.—After inserting, as we thought, a perfect gold filling, a suspicious-looking crack may suddenly appear in the enamel. This is due to the expansion of the gold in response to the heat engendered in polishing the filling, in other words, the expanding plug of gold has burst the unyielding walls of the cavity, and so surely as the gold will contract again on cooling, so surely must it leave a space between itself and the walls of the cavity.—C. E. BROWN, *Dental Record*.

To Effect Painless Removal of Enamel.—Place over the tooth a short piece of rubber tubing. Leave it on over night and the gums will be pressed back so that removal of enamel may be effected quite painlessly and without causing the gums to bleed.—*Dominion Dental Journal*.

To Prevent Profuse Flow of Saliva.—A dose of sulphate of atropin (1-120 gr.) three-quarters of an hour before operating will secure a very convenient though not uncomfortable dryness of the mouth, lasting from four to five hours.—H. OTIS LONGUE, *Southern Dental Journal*.

Sponge Tin.—Sponge tin is of invaluable assistance in gold filling, since it may be mechanically united with or welded to any brand whatever. The cavity need have no undercuts; packed in sponge tin nearly to the margin; upon this condense a layer of unannealed sponge gold, then a layer of annealed sponge gold and finish with annealed gold foil or cylinders.—ARTHUR SCHEUER, *Dental Cosmos*.

Contouring.—Tooth form should be held secondary to the contouring of the interproximal space, the guarding of which should be the first consideration. The form of the tooth, or even its full occlusion, is of less importance. The health of the tooth and its surroundings is the first consideration.—G. V. BLACK, *Dental Review*.

Compressed Air in Dentistry.—By turning a stream of compressed air on a filling you can allow the disc to make as many as a thousand revolutions per minute, if you wish, without causing any discomfort to the patient.—W. A. HECKARD, *Indiana Dental Journal*.

Scaling Sensitive Teeth.—Prepare equal parts of iodid of potassium and of iodine crystals in a saturated aqueous solution. Also a saturated aqueous solution of sulphate of zinc. Mix together equal parts of the supernatant fluid from the solutions and apply to the sensitive surfaces.—E. A. BOGUE, *Items of Interest*.

Oral Symptoms of Diabetes Mellitus.—The so-called "dry sockets," the rapid collection of soft yellow calcareous deposits about the teeth, a specific form of pyorrhœa alveolaris, and a peculiar sour-wine odor from the mouth are typical pathognomonic symptoms of diabetes mellitus.—HERMANN PRINTZ, *Dental Era*.

Glass-capped Medicine Bottles.—To insure easy removal of glass caps from medicine bottles smear the ground surface of the neck with vaselin.—A. E. MIMMACK, *Dental Forum*.

Insufficient Mastication.—In the use of food-stuff not requiring mastication there is no stimulation of the circulation of blood and lymph; no exercise of the teeth and alveolar processes; no cleansing, but rather a clogging of the teeth; no exercise of the salivary glands nor exhaustion of their contents, which remain unchanged; no nerves are excited by exercise, and no gain in the tone of the surrounding organs.—W. L. JEFFERSON, *British Dental Journal*.

Receding Gums.—Apply glycerite of tannin to spongy gums as a tonic astringent lotion. It reestablishes the nutritive function.—*Dental Register*.

Cementing Attachments to Natural Teeth.—Gutta-percha is most satisfactory. Shrinkage in the hardening is not detrimental. For some reason, a loose attachment of gutta-percha is not accompanied by decay and softening, as a loose attachment of oxyphosphate would be.—W. V. B. AMES, *Dental Digest*.

Care of Children's Teeth.—I never insert a filling in a child's tooth the same day that I prepare the cavity, my theory being that the preparation of the cavity acts as an irritant, more or less. I prefer to always insert a dressing which will restore the tooth to its normal condition.—J. E. FORSYTH, *Australian Journal of Dentistry*.

Fillings versus Crowns.—A filling leaves the cervical portion of the tooth perfect as nature left it, with nothing to cause irritation at the gum margin. The most perfectly fitting crown cannot be left so absolutely free from any source of irritation. Even an amalgam filling, costing but from one to three dollars, is worth more to the patient than a gold crown.—W. BUZZELL, *Ohio Dental Journal*.

Hydrogen Dioxid.—To prevent the acid reaction of hydrogen dioxid, when about to use it mix with an equal volume of lime-water. It will be equally effective and not escharotic.—*Dental Register*.

Antidote for Tincture of Aconite Root.—In a case of accidental poisoning, the patient having swallowed tincture of aconite with which the gum over the roots of a large molar was being painted, twenty drops of laudanum, the dose repeated after a few moments—with ammonia by inhalation—the patient being laid on the floor, brought him around all right in about thirty minutes. This antidote is not given in the books.—A. W. HARLAN, *Dental Review*.

The First Permanent Molar.—I should endeavor to save the first permanent molar, even if I had to crown it early in life, and, above all things, I should aim to keep it sufficiently built up, either by crowning or filling, so that it will hold the jaws apart and add character to the face.—C. N. JOHNSON, *Dominion Dental Journal*.

The Teeth and Dyspepsia.—The various ferments produced by bacteria may have an important effect in the causation of dyspepsia, and this may be one of the reasons why these cases are so intractable when the mouth has not been put in a thoroughly healthy condition.—W. H. WILLIAMSON, *Scottish Medical and Surgical Journal*.

Suprarenal Powder; Bleeding from Tissues Around Loose Teeth.—Touch the soft parts with suprarenal powder, and bleeding is instantly checked. No soreness is produced, nor is there any odor. It is absolutely harmless. It controls the tendency to bleeding of the gums on brushing. Marvelous results in nose-bleed, which is instantly checked.—E. H. RAYMOND, *Dental Review*.

Compressed Air in the Treatment of the Gum.—To dry the gum in the posterior portion of the mouth, throw compressed air directly on the spot a few seconds, securing the desired result. Then apply the medicament and you get immediate results, air pressure driving the medicines deep into the tissues. In this manner the application of counter-irritants is made easy.—S. FREEMAN, *International Dental Journal*.

Protection of the Mucous Membrane.—To protect the soft tissues in the treatment of pyorrhœa alveolaris, apply oleostearate of zinc and pack cotton and bibulous paper around the teeth.—ROBERT GOOD, *Dental Cosmos*.

The Mouth as a Source of Infection.—I do not regard the mouth as so dangerous a source of infection as some recent writers seem to have done. The tissues of the mouth are more resistant to the encroachment of pathogenic germs than other parts of the body; the fact that they are subjected to the presence of these growths so continually is the probable reason for it. But these are systemic conditions lying over and beyond, influencing these local conditions and infections that are as yet but vaguely known.—G. V. BLACK, *Dental Review*.

Suprarenal Capsule.—The dental application of the suprarenal capsule is largely confined to the region of the gingival margins of the gums. As a reducer of hemorrhage its action is both speedy and certain, from one to two minutes being all the time necessary to stop bleeding. There are no ill after-effects.—ELLIOTT R. CARPENTER, *Dental Review*.

Nickel-plated Parts.—One of the best methods known for keeping bright the nickel work about the office is to wet a rag with a solution of hypo-sulphite of soda, and wipe the article with it, drying with a soft towel, and then rubbing it with a piece of chamois.—*Bulletin*.

The Mouth Mirror.—A thoughtful and cleanly operator will never think of placing a mouth mirror in the mouth of a patient without first placing it in pure alcohol, there to remain until needed. It can then be dipped in water and dried with a napkin.—E. M. KAPITAN, *Dental Review*.

Holding Loose Teeth in Place.—Of the various materials in use for this purpose silk is only temporary, unless it is paraffined; silver wire corrodes too rapidly. My own formula is sixty-seven parts silver and thirty-three parts gold for wire of twenty-seven gauge. This gives both strength and the germicidal effect of the silver.—A. W. HARLAN, *Review*.

Painful Eruption of Third Molar.—Chloretoe is very useful for those cases in which the gum tissue is highly inflamed and before pus has formed, and while the condition is still most painful. Instead of resorting to the use of the knife, which often aggravates the inflammation, most marked results will follow the application of chloretoe.—C. H. OAKMAN, *Dental Review*.

Hot Carbolic Acid.—In cavities in soft and immature teeth, and with partially devitalized pulps which still cling to the walls of the root-canals with obstinate tenacity, and where gangrened pulps have brought teeth to the very verge of abscess, we have in hot carbolic acid a therapeutic agent of great potency. Its combination with other agents, as, for instance, cocain, may greatly extend its field of usefulness.—N. S. JENKINS, *Dental Cosmos*.

Silver Nitrate Stains.—The silver nitrate stain is very superficial. Hard or healthy enamel will not stain; only decayed or softened enamel takes the stain. Tincture of iodine will assist in removing the stain from the teeth. This treatment, following the application with hard polishing, will make any tooth harder, whiter and brighter. Should the silver nitrate be accidentally brought into contact with the hands or face, tincture of iodine, followed with aqua ammonia, will remove it.—WM. CONRAD, *Dental Cosmos*.

Bone Absorption Around Root Apex.—The nature of the absorption can to some extent be determined by the nature of the discharge. If it is thin, watery, yellowish, with little granules of bone mixed in, you can be pretty certain that caries of bone exists; if thick, rich pus, simple absorption; if it is yellow, streaked with blood, no granules, you can count on a roughened root-end, which should be confirmed by exploring through the external opening.—ELGIN MAWHINNEY, *Dental Review*.

Irritated Gum Tissue.—The soreness following the use of clamps, etc., may be overcome by painting the gum with tincture of calendula.—*Dental Cosmos*.

To Remove a Pin Cemented in a Root-canal.—Cut out the cement around the pin as far as expedient and apply aqua ammonia to decompose remaining cement, protecting the gum with rubber-dam. Rinse mouth occasionally with warm water. If a crown with pin cemented in be left over night in a bottle of aqua ammonia, the cement will be found a perfect mush and the pin easily removed.—WM. B MEAD, *Dental Cosmos*.

Sterilizing Bibulous Paper Wads.—Wads which are rolled between the fingers will seldom be found to be sterile. I have been in the habit of preparing a large quantity of them, soaking them in a solution of thymol in alcohol, drying them, and keeping them in a jar free from dust. They are then not only aseptic, but antiseptic. Dry heat is unsatisfactory.—W. D. MILLER, *Dental Cosmos*.

Removing Laboratory Stains.—Dry the hands thoroughly and rub them well with oil, which, getting into all the fissures of the skin, will loosen all dirt and grit, then wash the hands twice with some good soap to remove both oil and dirt. This will leave the hands clean and prevent from chapping in winter.—F. M. FULKERSON, *Dental Digest*.

Arsenical Paste.—The addition of five per cent. of lamp-black to your arsenical paste makes it easy to detect any particle that may get outside the cavity. It does not interfere in any way with the efficacy of the paste.—G. V. BLACK, *Dental Review*.

Care of the Eyes.—Colored glasses should always be worn when doing bright and glaring work with blow-pipe and porcelain furnace.—*Dental Hints*.

To Reflect Light in the Mouth.—Paint the dam around and between the teeth with "Japanese wing"—enamel white. Moisten the paint with 50 per cent. alcohol, giving one or more coats as required. The paint comes in small tablets, is clean, pure and odorless.—J. R. BELL, *Dental Digest*.

To Clean Saliva-ejector Tubes.—If a drop of lactic acid is put in the glass tube and swabbed out with a bit of cotton fastened on binding wire, it will dissolve the salivary deposits in the ejector tube, solving the difficulty in keeping the glass tubes bright and clear.—R. E. GILSON, *Pacific Gazette*.

Gomphiasis.—In gomphiasis, the loosened round teeth of advanced age, the osseous tissue is involved, and it is absolutely imperative that the teeth in their bony sockets be given immobility or rest, the factor in bringing about normal relations. Proper dieting will tend to correct the difficulty, although prosthetic appliances properly constructed are always a decided benefit.—P. J. CIGRAND, *American Dental Journal*.

Fastening Handles to Instruments.—Prepare a mixture of equal parts pumice and finely-powdered rosin. Heat the tang of the instrument and push it home while warm. Old pieces of corundum stone, pulverized, answer the same purpose.—M. CHARBOUNEAU, in *Archives Nationales*.

Compressed Air in Dentistry.—After giving nitrous oxid or any other general anæsthetic, the patient is revived quickly by the application of a strong force of compressed air directed squarely toward the face.—GEORGE ZEDERBAUM, *Dental Digest*.

Removal of Gum Tissue from Over Third Molars.—Use a rotary trephine knife in the engine; it works well. The beauty of it is you not only cut, but you take your chips with you. Use a local application of guaiacol on the surface first.—W. A. PRICE, *Ohio Dental Journal*.

To Prevent "Gagging."—Bromidin, in half teaspoonful doses every four hours for two days before operating, benumbs the sensory nerve tips of the buccal cavity and thus facilitates taking impressions of adjustment of rubber-dam, otherwise impossible, because of the annoying gagging peculiar to some individuals.—*Virginia Medical Semi-Monthly*.

To Prevent Rust in Hypodermic Needles.—Keep them in a tightly corked bottle of gasolin. When wanted, blow through the needle with hot-air syringe, then dip in alcohol, and the odor will disappear.—*Dental Register*.

Utilize Your Old Burs.—The best kind of a drill is made from an old cross-cut fissure bur. Grind on the two opposite sides only, shaping to a chisel edge, leaving the serrations on the edges.—H. G. LOGAN, *Dental Review*.

The Esthetic in Operative Dentistry.—I believe in grinding away as far as it is possible all pits and irregularities, sharp broken points of cups, defects natural, congenial or acquired in teeth, and rounding and smoothing them up.—A. L. HUNGERFORD, *Western Dental Journal*.

To Remove Rust Stains on Instruments.—Coat the instruments with a mixture of potassium cyanide 1 part, soft soap 1 part, prepared chalk 2 parts, water to make a paste. After removal of the paste coat with oil.—*Ohio Dental Journal*.

Teeth for Implantation.—Natural teeth that are being held in reserve for implantation should be kept in a ten per cent. solution of boroglycerin in distilled water, to an ounce of which add one-half drachm of melted carbolic acid.—*Dental Review*.

Facial Neuralgia.—In many cases relief will be promptly experienced from holding the hand opposite to the affected side in water as hot as can be borne. The method is so simple that it can be readily tried in every case, and if without benefit no harm will follow.—W. C. BELT, *Med. Sentinel*.

To Make a Finger-hold for Broaches.—Ordinary Donaldson broaches may be changed to handy broaches for molars by cutting off half the stem or handle and dropping two or three drops of ordinary sticky wax on the end to form a globule or finger-hold.—J. C. MONTGOMERY.

Examination of the Teeth.—Each tooth should be mentally isolated from every other tooth, and as carefully examined as though it were the only one in the mouth. Proceed thus with one after another until all have been examined.—E. A. BOGUE, *Dental Cosmos*.

Gum Massage.—In the treatment of pyorrhœa alveolaris massage of the gums, when the soreness leaves, is an excellent thing, using a little powdered sulphur on the fingers.—ROBERT GOOD, *Dental Cosmos*.

Cataphoresis.—**Inflamed Conditions of Pulp and Periodontal Membrane.**—The application of the continuous galvanic current gives relief by producing anæmia of the parts. No medicament required.—JOHN S. MARSHALL, *Dental Cosmos*.

Setting of Cement.—The least sprinkling of pulverized borax will retard the setting of oxyphosphate. Part of a drop of hydrochloric acid will hasten it.—*Dental News*.

Fungous Growths.—Protargol and largin, the newer silver preparations, are valuable in the treatment of fungous growths. They will not stain the tissues except after prolonged use.—A. W. HARLAN, *Dental Review*.

To Cleanse the Cement Spatula.—Very fine emery cloth, such as jewelers use, is found very effective for cleaning cement spatulas and other instruments where a polished surface is desired.—J. M. BRIMACOMBE, *Dental Review*.

Stained Instruments.—The discoloration or coating which results from frequent sterilization by boiling may be removed by rubbing the instruments with a cloth saturated with an aqueous solution of prepared chalk, ammonia and alcohol.—J. Q. BYRAM, *Dental Review*.

Gingival Inflammation.—If ligatures have worked up and inflamed the gingival, remove and direct a spray of pyrozone upon the inflamed area. The inflammation will soon disappear.—DR. DEICHMILLER, *Pacific Dental Gazette*.

Preserving Gutta-percha.—Gutta-percha for filling purposes may be preserved in good condition for years by keeping it in a solution of table salt.—*Dominion Journal*.

To Clean Files Used in Rubber Work.—Hold them in the jet of steam which escapes from the top of the vulcanizer when the pressure is above fifty pounds.—*Dominion Dental Journal*.

Sterilization of Rubber-dam, etc.—Rubber stands boiling best if it is in a boric acid solution.—*Journal American Medical Association*.

To Improve Oil Stones.—Smear a flat block of wood with glycerin and fine pumice and rub the stone, face down, till all traces of previous usage have disappeared. To ruin an oil-stone, clean with kerosene.—*Odontograph*.

Normal Salt Solution.—By normal salt solution is meant a solution of six parts of sodium chlorid in one thousand parts water.—*Dental Office and Laboratory*.

Swedish Toothache Drops.—Clove oil, cajeput oil, of each, 10; chloroform, 5; acetic ether, 5; menthol, 3; camphor, 1. Dissolve.—*Oesterr. Zeits. für Pharm.*

Broken Nerve Broaches.—Nerve broaches broken off in a root-canal can be easily removed after a dressing of 25 per cent. pyrozone, applied on cotton, has been left in the canal for a few days.—S. L. WALTON, *Items of Interest*.

To Remove Broken Donaldson's Broaches from the Pulp Canal.—Remove by means of a magnet made from a small instrument.—*British Journal of Dental Science*.

An Aid to the Saliva Ejector.—A small piece of wet, antiseptic gauze placed over end of the saliva ejector will prevent the tissues from being drawn in.—E. C. KROECK.

To Remove Wax from Utensils.—When pans, wash basin, etc., get waxy, clean with kerosene.—G. C. BROWN, *Western Dental Journal*.

Neuralgia.—Equal parts of benzoin and oil of peppermint rubbed on the affected part, or sprinkled on a cloth wrung out of hot water, in many cases acts like a charm.—*Pacific Medical Gazette*.

Saliva-ejector Tubes.—Keep glass tubes for saliva ejection clean by permitting them to stand in a weak solution of sulphuric acid.—W. G. EBENOLE, *The Dentists' Magazine*.

Broken Nerve Broach.—In case of a broken nerve broach in canal with end protruding through apex, fill the canal and open through the alveolus with round bur and remove the point.—E. A. PEAKER, *Dominion Dental Journal*.

To Drill Glass or Porcelain.—Moisten an ordinary drill with a mixture of two parts of oxalic acid and one part of turpentine. Keep the mixture in a tightly corked bottle.—*Dental Hints*.

A Preventive of Grating the Teeth During Sleep.—Open the bite at night by means of caps fitting over the bicusps and molars.—*Items of Interest*.

To Remove Blood Stains.—Soak in warm water to which has been added tartaric acid. No soap is necessary.—*Medical Times*.

Formaldehyd: An Antidote.—Should formaldehyd drop on the tongue, cheeks or lips swab with cotton dipped in grain alcohol. This will allay the burning sensation.—J. H. HANNING, *Items of Interest*.

To Clarify Wax.—Melt in a hot-water bath; remove and bring to a slow boil and break into it a fresh egg; stir until thoroughly cooked. Strain through cheese-cloth, and the wax will be as clean and pure as when first bought.—*Items of Interest*.

A Cement for Fastening Handles and Ferrules.—Equal parts of rosin and brick dust make a good cement for fastening handles and ferrules.—*Pacific Journal*.

Removal of Silver Nitrate Stains on Teeth.—Apply iodine, changing the nitrate into the iodide of silver; then apply ammonia, leaving the tooth stainless.—H. C. REGISTER, *International Dental Journal*.

Removal of Iodine Stains from Garments.—Dampen the spots on the cloth, cover with dry bicarbonate of soda. Renew the soda till the spot is removed.—*Dental Brief*.

To Remove Silver Stains from the Fingers.—Dip the fingers in a mixture of eight parts copper sulphate, two parts hydrochloric acid, and ninety parts water. Then wash in a sodium hyposulphite solution, and rinse with clear water. In case of cuts or abrasion, dilute the acid still further.—*Western Druggist*.

Burns from Acids.—If from carbolic acid apply absolute alcohol at once; if from hydrofluoric acid apply a strong solution of bicarbonate of soda. Never use these acids without having at hand some agent to stop their action immediately in case of accident.—D. C., *Dental Review*.

To Remove the Odor of Iodoform.—Wash the hands in soap and water; rinse with dilute aqua ammonia, after which use lemon-juice or cider vinegar. This will completely destroy the offensive odor.—*Eclectic Medical Journal*.

Removal of Calculus.—When hemorrhage interferes with the removal of calculus, pack a little dry powdered suprarenal capsule under the gingiva. This will secure a bloodless field.—E. R. CARPENTER, *Dental Digest*.

Local Styptic.—For hemorrhage from congested gums, apply dry powdered suprarenal capsule directly to the tissue. Leaves no soreness.—*Dental Review*.

To Soften Celluloid.—If strips of celluloid are dipped in hot alcohol they become very soft in two or three minutes, while after fifteen minutes they are as stiff as before immersion.—*Journal of the American Medical Association*.

Tooth Bleaching.—The brown discoloration following the death of a pulp and the diffusion of hemaglobin into the tubular structure of the dentin may be removed by the prolonged action of etherial pyrozone, followed by strong oxalic acid.—E. C. KIRK, *Dental Cosmos*.

Diseased Gums.—When the gums are inflamed, soft and spongy, and swollen, the ten per cent. solution of suprarenal extract, applied on cotton three times a day, will speedily accomplish a cure.—J. ROBERT MEGRAW, *Western Dental Journal*.

To Remove the Odor of Iodoform.—Use spirits of turpentine on the hands or instruments. Added to the wash water in using soap, it makes it very efficacious.—*Le Progrès Médicale*.

Canker Sores.—Use a saturated solution of salicylic acid in alcohol, for canker sores, drying the gum well before applying.—C. F. RODGERS, *Dental Digest*.

Gingival Hemorrhage.—In a bad case of gingival hemorrhage the gums were painted with turpentine, and the oil given internally, with the result that blood ceased to flow from the gums, and no longer appeared in the urine.—*Dental Digest*.

To Preserve Hydrogen Peroxid.—Take out a small quantity for immediate use. Then tightly cork the bottle and keep it standing inverted in a vessel of water.—*Dominion Dental Journal*.

A Substitute for Gold.—A new metal which seems to have the requisites of gold, while less costly, is composed of

Silver	3.53
Platinum	2.40
Copper	11.71

It is elastic and takes a most brilliant polish, is not acted on by the fluids of the mouth, and answers the same purposes as gold. (Translation.)—B. J. CIGRAND, *Dental Digest*.

The Protection of Nearly Exposed Pulp.—After the removal of the leathery, decomposed dentin, the layer of softened dentin nearest the pulp probably contains lactic acid, which should be neutralized by saturating with mild solution sodium bicarbonate, or weak ammonia water, or 5 per cent. sodium dioxid. Hydrogen dioxid in 10 per cent. neutral solution may be sufficient for surface disinfection, but it is well to saturate the layer with an antiseptic which may remain *in situ*. Dry with alcohol and warm air, and saturate with oil of cloves or eugenol. Wipe out excess, and again dry. Varnish with the following, giving second or third coat:

R. Beta naphthol 1 gr.
Methyl alcohol 20 drops
Added to ½ oz. bottle of "Cavetine" varnish.

The acid of zinc phosphate cannot pass through this varnish. Place asbestos or waxed paper over floor of cavity before last coat of varnish has completely dried. Introduce zinc phosphate, and if doubtful, complete filling with temporary stopping, and wait a few days.—OTTO E. INGLIS, *Stomatologist*.

Tic Douloureux.—Henry Bordier considers electricity the most favorable method of treatment for neuralgia. Apply the galvanic current, sixty to eighty milliamperes, for an hour daily, in trigeminal neuralgia, using aluminum or platinated copper electrodes. Two cases, men of fifty-nine and sixty-nine, are reported in detail, both cured permanently.—*Journal de Pracs*.

R. Aluminum plate 6 parts
Zinc 1 part
Phosphor tin 3 parts
Flux: stearic acid.

Useful for strengthening seamless aluminum crowns, preventing wearing through on occlusal surface.—*Dental Summary*.

For Relief of Reflex Pains from Diseases of the Pulp.—

R. Acetanilidi	grs.viii.
Phenacetin	grs.xv.
Caffeine citrate	grs.xv.

Misce et ft. pulv. No. viii.

Sig.—One to be taken every two hours.

The combined coal tar products act in perfect harmony, while the toxic properties are more or less neutralized, while smaller doses are more powerful in the combination.—LEO GREENBAUM, *International Dental Journal*.

To Keep the Hands Soft and White.—To counteract the effects of frequent immersions in antiseptic solutions the following will be found one of the very best of formulas:

R. Ol. rosæ	gtt. xv
Glycerin	5j
Spts. Myrciæ	§ iij
Ol. cajuput	gtt. xx

M.—Apply at night before retiring, first washing the hands thoroughly in hot water. In cold weather apply before going out.—*Journal American Medical Association*.

Alloy Cement.—For the alloy:

Silver	40
Tin	60
Platinum	3

For the cement:

Oxide of zinc	200
Borax	5
Silex	8
Glass	6

With phosphoric acid to dissolve to the consistency of glycerin.

Of the cement and the alloy equal parts, mixed and prepared as an ordinary zinc phosphate filling. It has all the qualities of any cement and also presents a metallic surface, a good non-conductor. While attaching itself to the tooth like an ordinary cement it is practically a metal filling.—C. B. PARKER, *Dental Cosmos*.

A Valuable Styptic.—A styptic of great value is prepared as follows:

Tr. benzoin	1 oz.
Alum	2 oz.
Aqua	20 oz.

Mix and boil six hours in a glazed earthen vessel, adding hot water to compensate for evaporation. Filter and keep in well-stoppered bottles. A drop of this fluid poured in a glass containing human blood produces instant coagulation.—M. E. LEGALLEY, *Ohio Dental Journal*.

Fœtor of Breath from Decayed Teeth.—

R. Thymol	grs. viii
Alcohol	℥ i
Glycerin	℥ iv
Formaldehyd (40 per cent. solution)	gtt. viii
Aquæ	q. s. ad ℥ iii

Use as a mouth wash.

—*Maryland Medical Journal*.

For Relief of Reflex Pains in the Face from Disease of the Pulp.—

R. Antipyrin,	
Phenacetin,	
Quinin sulphate,	
Powdered ginger	℥ss
Caffeine citrate	grs. xv.

Misce et ft. pulv No. iii.

Sig.—One every two hours.

—LEO GREENBAUM, *International Dental Journal*.

Pulp Devitalization.—A caustic paste that is painless and anæsthetic:

R. Arsenous acid	1.0
Nirvanin	1.0

—ROBERT MARCUS, *Dental Register*.



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